S. HRG. 115–570

# EXPLORING NATIVE AMERICAN SUBSISTENCE RIGHTS AND INTERNATIONAL TREATIES

## HEARING

BEFORE THE

SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES, AND COAST GUARD

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

OCTOBER 31, 2017

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED FIFTEENTH CONGRESS

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# EXPLORING NATIVE AMERICAN SUBSISTENCE RIGHTS AND INTERNATIONAL TREATIES

**TUESDAY, OCTOBER 31, 2017**

U.S. SENATE,
SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES, AND COAST GUARD,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
*Washington, DC.*

The Subcommittee met, pursuant to notice, at 2:30 p.m. in room 253, Russell Senate Office Building, Hon. Dan Sullivan, Chairman of the Subcommittee, presiding.

Present: Senators Sullivan [presiding] and Peters.

## OPENING STATEMENT OF HON. DAN SULLIVAN, U.S. SENATOR FROM ALASKA

Senator SULLIVAN. The Subcommittee on Oceans, Atmosphere, Fisheries, and the Coast Guard will now come to order. Good afternoon.

Under the title of "Exploring Native American Subsistence Rights and International Treaties," this hearing is going to discuss two issues of importance to Ranking Member Peters and myself, respectively.

I just had the opportunity to deliver a floor address and talked about many things that make our Nation so great—the diversity of cultures, the diversity of interests, and the diversity of states that really strengthens the United States. There is a long list of things that my colleagues know that make Alaska special—Michigan, too, of course, for my good friend Senator Peters. But the topic and the focus of today's hearing in many ways may top that list.

That is why I am so pleased to host this hearing and have so many Alaska Native leaders present at Congress in the audience and to testify at this hearing today.

The Alaskans of the North Slope and Bering Strait regions live in one of the most extreme environments on Earth, inaccessible by road and frozen in by sea for much of the year. Grocery stores are scarce. And what commercially available goods they do have often come at astronomical prices.

More times than I can count, I have mentioned in this Committee that Alaska is the superpower of seafood. Almost 60 percent of all seafood harvested in the United States comes from the waters of Alaska. But this far north in Alaska, even many wild fisheries are unavailable to my constituents.

Aboriginal subsistence whaling, therefore, is critical to the food security and cultural fabric of Alaska's North Slope and Bering

Strait communities. The whaling captains of various whaling crews in the villages are revered community leaders, apprenticing for decades before earning the honor of leading a crew being a whaling captain. Marrying the modern and traditional worlds in whaling hunts, these whaling crews go to great lengths to put traditional food on the table and, very importantly, to keep their cultures alive and healthy.

The aboriginal subsistence harvest in Alaska is sustainable and noncommercial. The number of bowhead whales are consistently increasing and may be at levels not seen since the dawn of the 20th century.

Dr. Suydam, who serves as the Vice Chair of the International Whaling Commission Scientific Committee, will discuss this further.

Worldwide whale stocks are managed through the International Whaling Commission, the IWC, a group of 88 countries that have ratified the International Convention for the Regulation of Whaling, combining traditional knowledge, much of which is gleaned in Alaska and on the North Slope, and modern science, resulting in the AEWC's gold standard for subsistence whaling at the IWC. In fact, the International Whaling Commission has consistently certified that the biological status of our bowheads is sustainable and healthy.

In 2018, the aboriginal subsistence quota for these Alaskan communities is up for renewal at the International Whaling Commission meeting in Brazil. This will be a very important meeting. As the State Department and NOAA formally represent the interests of the United States at the IWC, they will be flanked by members of the Alaska Eskimo Whaling Commission, who are the most capable Americans to speak to the importance of whale conservation, as their communities' way of life and food security depend on it.

I want to thank again our witnesses for being here today, many of whom who have traveled thousands of miles from literally the top of the world to be here.

And I now recognize Ranking Member Peters for any opening statements that he has.

And then I look forward to introducing and welcoming our witnesses, many of whom are close friends of mine.

Senator Peters.

**STATEMENT OF HON. GARY PETERS,**
**U.S. SENATOR FROM MICHIGAN**

Senator PETERS. Thank you, Mr. Chairman.

Good afternoon to our witnesses who have traveled some very long distances to be with us here today, and we appreciate all of your efforts.

I am looking forward to taking a close look at Native American subsistence rights to make sure we continue to protect those rights under international treaties.

First, I would like to take this opportunity to welcome Chris Swartz, President of the Keweenaw Bay Indian Community, or KBIC. I had the honor of meeting with President Swartz just last August when I sat down with him and members of the tribal council just a mile from Keweenaw Bay on the shores of Lake Superior.

While I was there, the KBIC gifted me some wild rice and maple syrup that were harvested locally, which, along with fish, are important traditional foods within the tribal community.

Chris has shared with me the work of KBIC and the Great Lakes Indian Fish and Wildlife Commission to raise the issue of legacy pollution left behind by decades of mining and manufacturing, a legacy that includes stamp sands. I am eager for this hearing as a chance to learn more and to raise the profile of this environmental issue and its need for a long-term solution.

The interaction of international treaties with those that guarantee rights to our Native American communities can pose several complications. This hearing serves as an opportunity to focus on the most basic of rights and make sure that we honor and respect those subsistence rights granted to our Native American communities. These issues face communities from Alaska to the Great Lakes with various overlapping treaties, and it is important to figure out what we can do to address issues impacting subsistence practices.

Subsistence rights, whether for whales or fish or other natural resources, are important rights to protect. The definition of subsistence is to maintain or support oneself at the minimum level, fulfilling a basic need—not for excess, not for profit.

Our Native American communities have always been and continue to be stewards of the land. They have traditionally always forged a sustainable relationship with the environment. Through thousands of years of living on and with the land, Native American communities have a trove of information and an incredible understanding of our environment and the interrelations of our ecosystems.

In the Great Lakes, communities like the Keweenaw Bay Indian Community have been fishing lake trout and whitefish for millennia. They know intimately what parts of the lake are important for spawning sites, for juvenile fish to grow and thrive. And I am sure they know exactly where to find the big one along the shores of Lake Superior as well.

Lake Superior is a marvel of nature, a freshwater inland ocean, the largest lake by surface area in the world. It is the cleanest, coldest, and deepest of the Great Lakes with enough water to cover all of North America and South America with one foot of freshwater.

Despite Lake Superior's size, it has not proven invincible. Today, we all hear about the impacts of human extraction along the lakeshores and how it has affected the ability of the lake to provide subsistence to all communities, both tribal and nontribal, and beyond its shores.

Michigan's Upper Peninsula, or as we call it in Michigan, the UP, has a history of mining and copper production that built up communities throughout the northern reaches of the state. Historic mining from before the establishment of the EPA has left a host of legacy impacts across the UP. One of those is literally miles upon miles of stamp sands, a waste created from crushing rock to extract copper ore.

I have seen these sands firsthand, and the extent of the shoreline they cover is immense. But they are more than an eyesore. They

contain trace amounts of heavy metals that harm the most sensitive parts of Lake Superior's environment and food web. Unfortunately, these sands do not remain in one place, but they are moving into one of the most important habitats for fish in the entire Lake Superior area, the Buffalo Reef in Grand Traverse Bay. As the sands erode, they smother productive spawning sites and habitat for juvenile fish.

The impact on fisheries is horrific, but it is critical to recognize that these eroding sands are also disrupting and damaging the beautiful beaches and shores that make Lake Superior a pure Michigan destination. The legacy pollution is something that every Keweenaw residence has to deal with.

Our tribal communities were some of the first to recognize the problem caused by stamp sands and raised the profile of this issue. The impacts to the Lake Superior ecosystem range from local communities, both tribal and nontribal, to international, as the lake is shared between the United States and Canada.

We need long-term solutions. This past summer, dredging to remove the sands most imminently impacting Grand Traverse Bay is providing a temporary fix and giving us 3 to 7 years to figure out what to do. But we need to do much more, and we will explore that in this hearing.

Mr. Chairman, I look forward to this hearing and once again thank you for hosting it.

{The prepared statement of Senator Peters follows:]

PREPARED STATEMENT OF HON. GARY PETERS, U.S. SENATOR FROM MICHIGAN

Thank you, Mr. Chairman, and good afternoon to our witnesses who have traveled some long distances to be here today. I am looking forward to taking a close look at Native American subsistence rights to make sure we continue to protect those rights under international treaties.

First, I would like to take this opportunity to welcome Chris Swartz, President of the Keweenaw Bay Indian Community, of KBIC. I have had the honor of meeting President Swartz multiple times, including last August when I sat down with him and members of the tribal council just a mile from Keweenaw Bay in Lake Superior. While I was there, the KBIC gifted me wild rice and maple syrup that were harvested locally, which, along with fish, are important traditional foods in the tribal community.

Chris has shared with me the work of the KBIC and the Great Lakes Indian Fish and Wildlife Commission to raise the issue of legacy pollution left behind by decades of mining and manufacturing, a legacy that includes stamp sands. I am eager for this hearing as a chance to learn more and raise the profile of this environmental issue and its need for a long-term solution.

The interaction of international treaties with those that guarantee rights to our Native American Communities can pose several complications. This hearing serves as an opportunity to focus on the most basic of rights and make sure we honor and respect those subsistence rights granted to our Native American Communities. These issues face communities from Alaska to the Great Lakes with various overlapping treaties, and it is important to figure out what we can do to address issues impacting subsistence practices.

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I have seen these sands firsthand, and the extent of shoreline they cover is immense, but they are more than an eyesore. They contain trace amounts of heavy metals that harm the most sensitive parts of Lake Superior's environment and food web.

Unfortunately, these sands do not remain in one place but are moving into one of the most important habitats for fish in all of Lake Superior, the Buffalo Reef in Grand Traverse Bay. As the sands erode, they smother productive spawning areas and habitat for juvenile fish.

The impact to fisheries is horrific, but it is critical to recognize that these eroding sands are also disrupting and damaging the beautiful beaches and shores that make Lake Superior a "Pure Michigan" destination. The legacy pollution is something that every Keweenaw resident has to live with.

Our tribal communities were some of the first to recognize the problem caused by stamps sands and raise the profile of this issue. The impacts to the Lake Superior ecosystem range from the local communities both tribal and non-tribal to international as the Lake is shared between the United States and Canada.

We need long-term solutions. This past summer dredging to remove the sands most imminently impacting Grand Traverse Bay is providing a temporary fix and giving us 3 to 7 years to figure out what to do.

As the process to remediate the sands moves forward, everyone needs to be at the table. Having the tribes here today to share more about stamp sands with us is a first step in providing their unique first-hand knowledge into a long-term fix and ensuring that they will be included as partners in working towards a solution.

And truly, everyone in Michigan deserves a say in finding long term solutions. Just this past spring, three Lake Linden high schoolers came and visited my office to share their efforts to help find a solution to the stamp sands problems.

They tested how different plant species grow on stamp sands. Having plants growing on the sands would help stabilize the sands and reduce erosion.

Mr Chairman, I ask that an article describing their work from Houghton, Michigan's Daily Mining Gazette along with a letter from the council of Lake Committees supporting the stamp sands remediation be entered in the record.

We need multi-pronged solutions to solve the stamp sands problems, and all Michiganders—tribal and non-tribal, young and old—have a stake in the outcome.

We need to learn more about this issue to be effective, and I thank you, Mr. Chairmen for calling this hearing today for all of us learn about this critical issue for the Keweenaw, the state of Michigan, and the Great Lakes basin in addition to learning about the whaling issues affecting Alaska's Eskimo communities.

Senator SULLIVAN. I want to thank you, Senator Peters, for your cooperation and the good work that we have been doing together here. I also want to thank my colleagues for being here at this hearing today. These are very, very important members of both of our communities. And your being here shows a lot of respect. I know a lot of Members are really busy, but just showing up at the outset really means a lot to me and my constituents.

I know, Senator Peters, he talked about the big one in Lake Superior. I think we had a big one off the North Slope, which was maybe a 60-foot bowhead this summer, so fairly big on the big-one scale.

Senator PETERS. A little bigger than we have.

Senator SULLIVAN. Yes. But I do want to thank the witnesses. I cannot emphasize enough how revered our whaling captains are in their communities and throughout Alaska. We have a number in the audience and at the table.

I will begin by introducing all four of our witnesses today: Mr. John Hopson, who is the Chairman of the Alaska Eskimo Whaling Commission; the Honorable Harry Brower, Mayor of the North Slope Borough; Dr. Robert Suydam, the Senior Wildlife Biologist from the North Slope Borough; and as Senator Peters mentioned, Mr. Chris Swartz, the President of the Keweenaw Bay Indian Community, KBIC.

Each of you will have 5 minutes to deliver your oral statement. A longer written statement from each of you will be included in the record.

We will begin with you, Mr. Hopson. You have 5 minutes. You are recognized, sir. Thank you for being here.

**STATEMENT OF JOHN HOPSON, JR., CHAIRMAN, ALASKA ESKIMO WHALING COMMISSION**

Mr. HOPSON. Thank you, Mr. Chairman, respected Senators. Good afternoon. My name is John Hopson Jr. I am a husband, a father, and a whaling captain from Wainwright, Alaska. I am also the Chairman of the Alaska Eskimo Whaling Commission.

Thank you for giving us the opportunity to be here to testify on our bowhead whale subsistence quota. Our people have hunted the bowhead whale for thousands of years. Today, the AEWC's 11 villages harvest on average 41 bowhead whales every year for subsistence. This is less than one-fourth of 1 percent of the current population size.

Based on our observation and knowledge of the whales, we know that this harvest is sustainable, and the IWC Scientific Committee supports that and confirms this.

The bowhead whale is essential for our cultural and nutritional survival. After a successful harvest, multiple generations come together from our communities to celebrate the whales that have given themselves to us and to share the bounty.

The whale harvest is a community effort. The community supports us as whaling captains, and they rely on us to be successful to bring in the whales to share.

Our people have always regulated our subsistence harvesting activities. But since 1977, we have been under the international regulation after the IWC decided that we should not be able to take our whales.

Since then, we have proven that our bowhead whale stock is healthy and growing, and we have met other IWC demands. We have proven that we need the whales. We have modernized our weapons to improve efficiency and animal welfare in our harvest.

This year, one of our young hunters was brutally attacked on Facebook for taking his first whale. They even threatened his life.

The IWC has become a highly political body. It is now fragmented into voting blocs with some countries that oppose whaling. To set our quota, it takes a 75 percent majority vote, including countries that oppose whaling. In 2002, the U.S. could not get that

majority, and we lost our quota, again, due to the IWC politics. We were very fortunate that the U.S. was able to get our quota back at a special meeting.

Neither the IWC convention nor the Whaling Convention Act covers a situation where a country cannot get the IWC to act on a subsistence quota.

The next IWC meeting is in September 2018. Our quota will expire at the end of December, and our southern villages will have to hunt the first of January. If the IWC doesn't act to reset our quota, the U.S. will have only three and a half months to try to get our quota back.

The amendment to the Whaling Convention Act we are asking you to support will allow the U.S. to deal with a situation where the IWC does not reset our quota and it expires.

I want to be very clear that we have a very good working relationship with the U.S. delegation and that we are committed to our role at the IWC. Next April, the AEWC and North Slope Borough will host a meeting of the IWC aboriginal subsistence whaling working group with a meeting in Barrow.

We are not asking to get out of the IWC. Under this amendment, quotas can only be set on the basis of the IWC Scientific Committee's advice, and it requires us to continue working with the IWC to try to get a positive vote on our quota.

Thank you, and I am happy to try to answer any questions you might have, Mr. Chairman.

[The prepared statement of Mr. Hopson follows:]

PREPARED STATEMENT OF JOHN HOPSON, JR., CHAIRMAN,
ALASKA ESKIMO WHALING COMMISSION

**Executive Summary**

The bowhead whale subsistence harvest, conducted for millennia, is critical to the food security and nutritional and cultural health of thousands of American citizens living in northern and western Alaska. The Scientific Committee of the International Whaling Commission (IWC) confirms the harvest as sustainable and Alaska Native subsistence need for bowhead whales is well documented. The IWC subsistence harvest quota for bowhead whales expires in December 2018. A successful effort to block the 75 percent majority vote needed to renew the IWC quota could render this harvest illegal under international law.

The bowhead subsistence quota was blocked for political reasons in 2002. The IWC ended its meeting without acting on the U.S./AEWC bowhead whale subsistence quota request. The quota was later restored at an intersessional meeting. Greenland subsistence whaling quotas were not set in 2012, again for political reasons, but their quota was not restored. Greenland hunters were forced to gather food without a quota and have been branded as international outlaws.

The IWC will hold its 2018 meeting in September. If the IWC fails to reset the bowhead whale subsistence quota, the U.S. will have only three and a half months to attempt reinstatement, since the AEWC's villages in the Bering Strait Region hunt throughout the winter, taking whales as early as the first week of January.

Failing this, through no fault of ours, we will be branded as outlaws, compelled to feed our families without an IWC quota in place.

In northern Alaska, members of the Native community wait anxiously for each quota outcome at the IWC. This international legal threat, if it occurs, will be devastating, creating confusion, panic, and the fear of hunger in our remote, isolated communities.

The potential for the IWC to fail to act on a quota request was not contemplated by the drafters of the International Convention for the Regulation of Whaling (Convention) nor by Congress in passing the Whaling Convention Act (Act, 16 U.S. Code Subchapter II). We seek a clarifying amendment to the Act to address this oversight.

**Testimony**

Good afternoon, my name is John Hopson, Jr., I am a husband and father, and a whaling captain in the bowhead whale subsistence harvest. I was born and have lived all my life in Wainwright, Alaska. Among other duties within my community, I serve as Wainwright's Commissioner to the Alaska Eskimo Whaling Commission (AEWC), and as Chairman of the AEWC.

Today I would like to give you some background on the Alaska Eskimo Whaling Commission, and on the statute and international treaty that bring us here today.

**The Alaska Eskimo Whaling Commission**

The Alaska Eskimo Whaling Commission (AEWC) is a not-for-profit entity, formed by the whaling captains of 11 United States communities located along the northern coast of Alaska, from the Bering Strait Region to the U.S. border with Canada. There is no road system in northern Alaska. Our remote villages are accessible only by air or sea. Village supplies arrive by barge or airplane, making store-bought supplies and food items extremely expensive in our communities, where there are few employment opportunities. Therefore, we depend on hunting to feed our families, with the ocean as our most important source of food and natural supplies.

*Bowhead whales, which can range up to more than 50 feet in length, averaging about one ton/foot in weight, are our most important resource and the bowhead whale harvest is the heart and soul of our subsistence culture.*

In 1977, the IWC banned our subsistence harvest. Neither the IWC nor the U.S. Government consulted with our people before taking this action. We learned about this decision when Federal marshals showed up in our villages and told our elders that we could no longer conduct our subsistence harvest.

The IWC's decision was based on faulty research which led people to believe that the Western Arctic bowhead whale stock, from which we hunt, was severely depleted and declining toward extinction. Our whaling captains, who have spent countless generations observing the whales, knew that the stock was healthy and growing rapidly, after having been heavily hunted and depleted during the time of Yankee commercial whaling in the late 1800s and early 1900s.

The IWC's action was devastating to our communities and led to widespread hunger, because there is no means of replacing either the quantity or quality of the food that the whale provides. So, the whaling captains of our villages joined together to form the AEWC, to work with the U.S. Government and the IWC to address both scientific understanding and harvest management concerns related to the bowhead whale and our subsistence harvest.

We are very fortunate that the North Slope Borough was able to step in and develop a research program that, still today, provides reliable science on our bowhead whale stock.

Today, 40 years after the Federal marshals came to our villages, conservation organizations from around the world refer to the AEWC's management practices as the gold standard in wildlife conservation. The bowhead whale science program is recognized around the world as state-of-the-art.

The AEWC manages the bowhead whale subsistence harvest, pursuant to tribal delegation, under a Cooperative Agreement with NOAA, originally entered in 1980, under Section 112 of the Marine Mammal Protection Act. The AEWC's Management Plan, approved by NOAA, contains the rules that govern the conduct of our harvest. Under the Cooperative Agreement and Management Plan, the AEWC reports seasonal harvest results to NOAA Fisheries and consults with NOAA on questions and decisions related to management of the harvest.

The North Slope Borough, in cooperation with the AEWC's whaling captains and the National Marine Fisheries Service's Marine Mammal Laboratory, conducts research on the size and health of the Western Arctic bowhead whale stock, reporting research results annually to the IWC's Scientific Committee. Researchers conduct a census of the population every five to ten years and submit results and revised population estimates to the Scientific Committee for scientific peer review. Mayor Brower and Dr. Suydam will speak more to these topics.

*The Whaling Convention Act of 1949 Must Be Amended to Address a Drafting Flaw in the International Convention for the Regulation of Whaling*

The U.S. is an original signatory of the 1946 Convention, establishing the IWC. Domestically, NOAA implements the Convention and decisions of the IWC through the Whaling Convention Act and its regulations.

The IWC was founded to manage commercial whale hunts. An IWC moratorium on the commercial harvest of all whale stocks went into effect in 1986. Since that time, the IWC has managed the world's four Aboriginal subsistence harvests of

large whales, including the bowhead whale. Under the Convention, the IWC manages harvests through the setting of quotas on whale stocks.[1] The setting of a quota requires an amendment to the legally binding Schedule of the IWC and the Schedule can only be amended through an affirmative vote of 75 percent of the voting members. Thus it is not very difficult for just a few countries to block a quota even if the scientific evidence shows that a harvest is sustainable.

Article V of the Convention provides a process by which IWC members can object to decisions of the IWC. However, the Convention does not provide a legal remedy for situations in which the IWC fails to act affirmatively to amend its Schedule, nor does the Act provide a remedy in this instance. Certainly, such an event would not have been anticipated by the Convention's original drafting parties, who came together for the express purpose of coordinating their commercial whaling activities. However, a successful effort to block a 75 percent majority vote on the bowhead whale subsistence quota could deny Alaska Natives legal access to the critical nutritional and cultural resource of the bowhead whale.

*This is the issue we seek your assistance in addressing.*

The prevailing interpretation of the Convention holds that Aboriginal subsistence quotas, which are set forth in the Schedule in multi-year blocks, expire at the end of the final year listed for each quota block. Thus, a failure of the IWC to amend the Schedule to establish a new quota block, arguably, results in the expiration of the harvest quota. In this case, any ongoing harvests by subsistence communities, who depend on whaling for survival, are considered illegal, regardless of the reason for the IWC's failure to re-establish the quota.

*Therefore, a harvest that is determined to be sustainable by the IWC Scientific Committee and that is critical to human survival, can be rendered illegal by a successful effort to block the 75 percent majority vote needed to renew an existing quota.*

This is not a remote possibility. Today, powerful members of the international NGO community wield significant influence at the IWC. Some of these organizations oppose all forms of whaling, including Native subsistence harvests. Some use this opposition as a basis for funding and membership drives.

The U.S. is a leader and strong advocate for the IWC's efforts to protect whale stocks from over-exploitation, to reduce by-catch, and to promote healthy marine habitat. Simultaneously, the U.S. works with the IWC's three other subsistence harvesting nations—Russia, Denmark/Greenland, and St. Vincent and the Grenadines—in the effort to preserve the bowhead whale and other sustainable Aboriginal subsistence quotas at the IWC.

The U.S. Delegation provides support for the AEWC in our effort to preserve the legal right of Alaska Natives to continue the sustainable bowhead whale harvest. However, the IWC has become fragmented into voting blocks. Thus, the U.S. must assemble a consensus or a sufficient majority to carry a vote to amend the Schedule, across voting blocks that include countries strongly opposed to the setting of any whaling quotas, including countries under the political influence of international anti-whaling organizations. The U.S.'s ability to succeed at this effort is increasingly less certain.

In addition, IWC members from both pro-and anti-whaling factions at times oppose the bowhead quota for reasons entirely unrelated to their views on whaling or to the proven health of the whale stock, the need of our communities for food, or the AEWC's and U.S.'s highly successful management of the harvest and science program. Rather, IWC members at times oppose the bowhead subsistence quota to influence U.S. views on other issues. In the spring of 2002, the IWC ended its meeting without setting a bowhead harvest quota, due to a political dispute between the U.S. and other countries, unrelated to the Alaska subsistence harvest. As a result, and without justification, we again faced a moratorium on our crucial bowhead whale harvest, despite sound science and international regard for the AEWC's stellar management practices.

While our bowhead whale subsistence quota ultimately was restored at an IWC intersessional meeting in 2002, the threat to our quota was renewed at the IWC's 2007 meeting and preserving our legal ability to harvest this resource is an ongoing political and strategic challenge for the U.S.

To further illustrate the mounting intensity of opposition to Native food gathering, this year a young man from Gambell, Alaska was subjected to vicious attacks and even death threats through Facebook posts, following the landing of a whale. Chris Apassingok is 16 years old. He, his family, and his community were elated

[1] Harvests are also subject to population research and animal welfare requirements. In addition, Aboriginal subsistence harvests are subject to proof that the hunting communities need the food.

when he landed his first whale, enabling him to "feed the people." Their joy turned to fear for his safety and mental health as the malicious posts started pouring into his Facebook account, instigated by Paul Watson of Sea Shepard.

In October 2012, the last meeting at which the IWC considered Aboriginal subsistence quotas, anti-whaling interests blocked action on a request by Greenland for a minor increase in its subsistence harvest numbers. As in 2002, with the bowhead quota, members of the IWC attempted to address the Greenland situation through an intersessional meeting, hosted by the U.S. However, enough countries failed to attend the meeting that a quorum could not be established. As a result, in 2013, Greenland subsistence hunters were compelled to harvest food for their families and communities without an IWC quota. For this, they have been branded as international outlaws among anti-whaling forces and dogged at the IWC.

**The Need for Action Is Urgent**

The IWC now holds its biannual meetings in the fall. In 2018, the meeting will be held in September. The AEWC's villages in the Bering Strait Region conduct their harvests throughout the winter, sometimes as early as the first week of January. Therefore, if the IWC fails to reset the bowhead whale subsistence quota in September, the U.S. will have only three and a half months to try to rally a quorum of IWC members to an intersessional meeting. Failing this, our whaling captains would be forced to hunt as outlaws to feed our families.

In northern Alaska, members of the Native community wait anxiously for each quota outcome at the IWC. This legal threat, if instigated, would be devastating, creating confusion, panic, and the fear of hunger in our remote, isolated communities.

*We sincerely hope that our Government will stand by our communities and close this loophole that could allow foreign interests to criminalize food gathering by our remote, northern Alaskan Native communities.*

To tell you a little bit about who we are and what we do:

**The Bowhead Whale Subsistence Harvest**

Our communities have harvested the bowhead whale for food for thousands of years. Our bowhead whale subsistence harvest remains central to the food security and the nutritional and cultural well-being of our villages and of communities throughout northern Alaska today. This resource is so important that it literally is the center piece of our culture. In English, we must speak of whaling and hunting or harvesting the whale, but our belief is that the whale gives itself so that the people may continue to live. For those of us who are fortunate enough to be whaling captains, there is no greater honor than to have a whale present itself, and then to be able to share that whale with our families, our community, and with Native Alaskan families and communities throughout our region.

The IWC's Aboriginal subsistence quota for bowhead whales is 67 strikes per year, to land 56 whales, with an additional annual carryover of 15 unused strikes from previous years. The IWC sets a strike and landed quota because sea, ice, and weather conditions, especially in the spring, prevent us from landing 100 percent of the whales we strike.

This level of quota was set by the IWC 20 years ago. Under a U.S.-Russian bilateral agreement, seven of the 67 strikes go to Chuktoka hunters each year. Since the IWC agreed to this harvest level, the estimated size of the Western Arctic stock of bowhead whales has doubled, and its annual growth rate is estimated at 3.7 percent. The subsistence harvest is less than one-fourth of one percent (< 0.25 percent) of the current population estimate, which may be near 21,000.

We land, on average, 41 whales per year. Depending on its size, each whale provides us with 12–20 tons of highly nutritious food, for an annual average of about 500 to more than 800 tons of food each year. There are no substitutes for the quantity or nutritional quality of this subsistence food resource. Store-bought food is extremely expensive in our villages, where jobs are scarce; few families could survive on store-bought food alone. From a broader perspective, our local food gathering has virtually no carbon footprint, compared with the carbon emissions that would be caused by food shipments that would need to travel thousands of miles to our remote villages.

Our spring hunting is done primarily from wood framed canoes, or *umiaqs,* covered in seal or walrus skins. With the retreat of sea ice, however, some of our villages must conduct the spring harvest from motorized skiffs, previously used only for harvesting during the fall open water season. My village is one of the spring hunting villages that has had to learn to hunt from motorized skiffs. Whatever boat we use, we take the whale with a hand-held darting gun, secure it to our boats by

hand and tow it to the ice-edge or shore. If we have a stable shore-fast ice platform, we pull the whale onto the ice by hand.

Our communities' need for the bowhead whale is well documented and social scientists are now beginning to document our practices of sharing the whale and other marine resources, not only within our villages, but throughout Alaska, even to Anchorage [2]. They refer to our practices as a *mixed cash-subsistence economy.* Those of us who have paying jobs work to bring in cash so that we can buy hunting equipment to hunt the resources we need to make sure that our communities and others who have need are fed. In this way, we leverage the cash income that is available to us into a much greater quantity of food than we could purchase with that income.

For example, in my village, steak costs an average of approximately $25.00 per pound. Therefore, one ton of steak, if it could be flown in, would cost about $50,000. Purchasing enough steak to replace one whale would cost about $600,000—$1M. Purchasing steak to replace the annual whaling harvest would cost between $25M and $41M per year. By comparison, outfitting a crew and landing a whale can cost an average of about $40,000, if the captain must replace equipment. So, with one whale, a captain can feed hundreds of people for about 60¢–$1.00 per pound, with food that far exceeds steak in nutritional quality and provides for our spiritual and cultural well-being. The whaling captains in our 11 villages share the whales, that have given themselves to us, to feed thousands of people each year.

Using these numbers helps to illustrate the fact that our ability to harvest the whale is essential to the food security of our northern Alaskan communities and to us as American citizens. However, numbers cannot illustrate what the whale is to us spiritually and emotionally. We are The People of the Ice Whale. Each year, our bowhead whale harvest reinforces the cultural identity of our people, as we practice our hunting and sharing traditions, and train our children in our cultural practices and traditions. Without the whale, the heart and soul of our culture would die.

**The AEWC's and North Slope Borough's Work at the International Whaling Commission**

The AEWC's Chair and Vice Chair, and our North Slope Borough Mayor and scientists attend all regular and many intersessional meetings of the IWC, often at our own expense. We actively participate with the U.S. Delegation in preparations for IWC meetings and actively participate in all relevant discussions within those meetings.

In 2015, I participated in a special IWC Workshop, held in Maniitsoq, Greenland, on Aboriginal Subsistence Whaling. Next spring the AEWC, the North Slope Borough, and NOAA will host a second meeting, in Barrow, on Aboriginal subsistence issues, in preparation for the fall, 2018 IWC meeting.

Our scientists have conducted groundbreaking research on the bowhead whale population, and are leading the effort at the Scientific Committee to develop a new, science-based management procedure for Aboriginal harvests. Our scientists and their work are so highly respected at the IWC that Dr. Suydam has been elected Vice Chair of the IWC Scientific Committee and will ascend to Chairman of that very highly regarded peer review body in 2018. He will be the second IWC Chair from our ranks. Dr. Judy Zeh, who conducted groundbreaking statistical work on the bowhead whale census was Chair of the Scientific Committee during its 2000–2002 meetings. She continues to participate in the Committee.

In short, the AEWC and North Slope Borough are committed to our role in bowhead whale conservation, the ongoing development of sound management practices within the IWC, and our continued participation in the work of the IWC.

**The AEWC's Conservation Work Beyond the IWC**

Beyond research and our management duties, the AEWC's mandate is, *"to safeguard the bowhead whale and its habitat and to support the aboriginal subsistence whale harvest and traditional culture of its member communities."* Therefore, when offshore oil and gas development came to our waters in the 1980s, the AEWC worked with Congress to amend the Marine Mammal Protection Act to provide support for our efforts to ensure that the development would not harm the whale, its habitat, or our harvest opportunities. An article describing this ongoing and highly successful work is attached to this testimony.

In more recent years, as sea ice recedes and we see increasing vessel traffic in our waters, the AEWC, working with the U.S. Coast Guard, was a leader in the effort to form the Arctic Waterways Safety Committee, the harbor safety committee

[2] BurnSilver S, Magdanz J, Stotts R, Berman M, Kofinas G (2016), *Are mixed economies persistent or transitional? Evidence using social networks from arctic Alaska.* American Anthropologist 118(1):121–129. See attached.

established to develop guidelines for the management of vessel traffic in U.S. waters from the Bering Strait Region, north. This Committee now meets twice yearly. Through it we are working with other marine mammal hunting organizations, vessel operators from industrial and commercial concerns, including tourism, and with marine researchers to develop a Waterways Safety Plan for the Arctic.

Anyone familiar with the AEWC and our work knows that as whaling captains we take very seriously our responsibilities: to feed our people, to provide leadership in our communities, and to serve as leaders in the conservation of the bowhead whale resource and the preservation of our traditional subsistence culture.

Thank you for allowing me to speak to you today and I am happy to try to answer any questions you might have about the AEWC or our work at the IWC.

*Quyanakpak*

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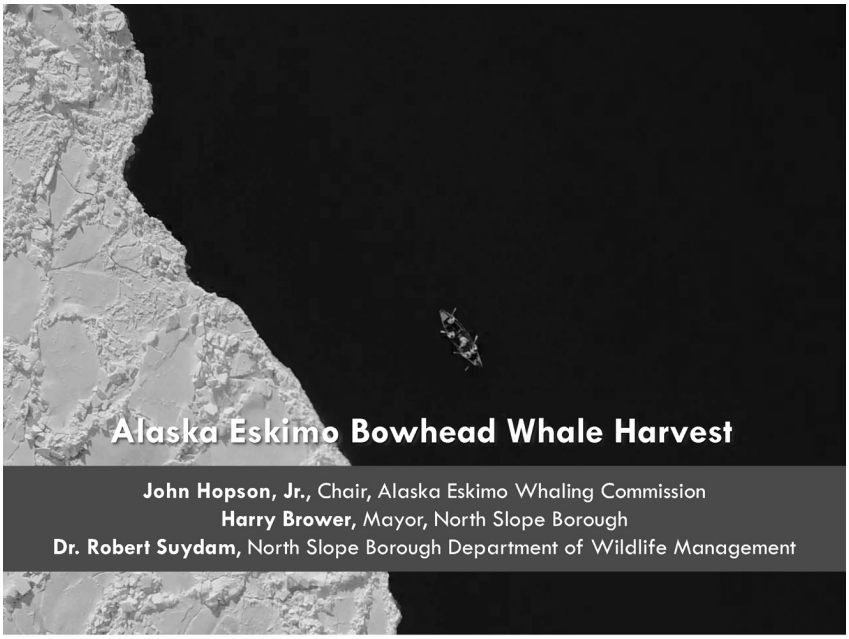

Alaskan Eskimo's have subsisted on the bowhead whale since time immemorial.

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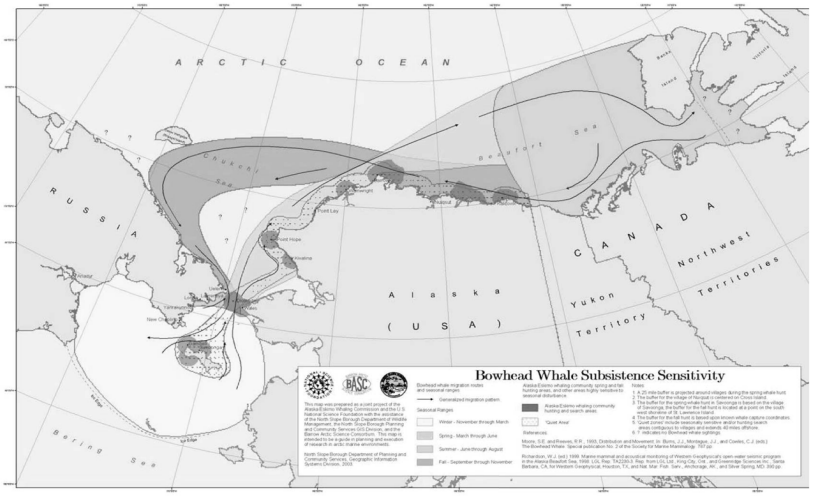
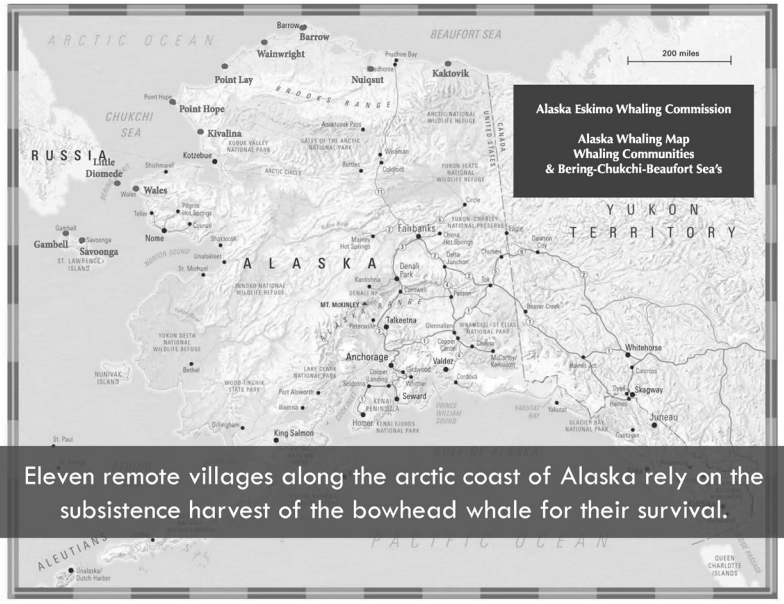
The subsistence harvest of the bowhead whale is at the center of Eskimo culture and traditional values.

The migration route of the bowhead whale.




Eleven remote villages along the arctic coast of Alaska rely on the subsistence harvest of the bowhead whale for their survival.

Crews work day and night clearing a trail
through ice ridges to access the ice edge.

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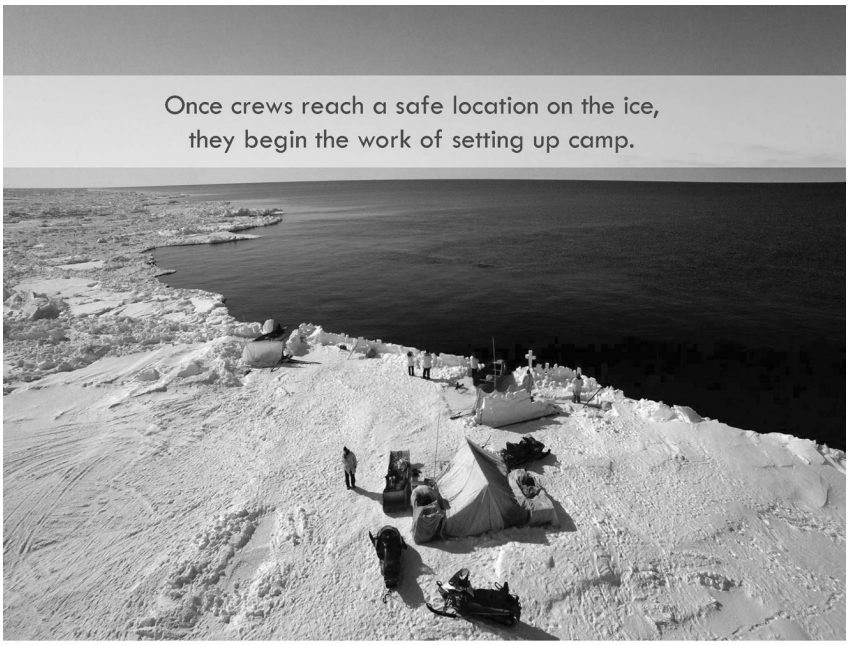
Once crews reach a safe location on the ice,
they begin the work of setting up camp.

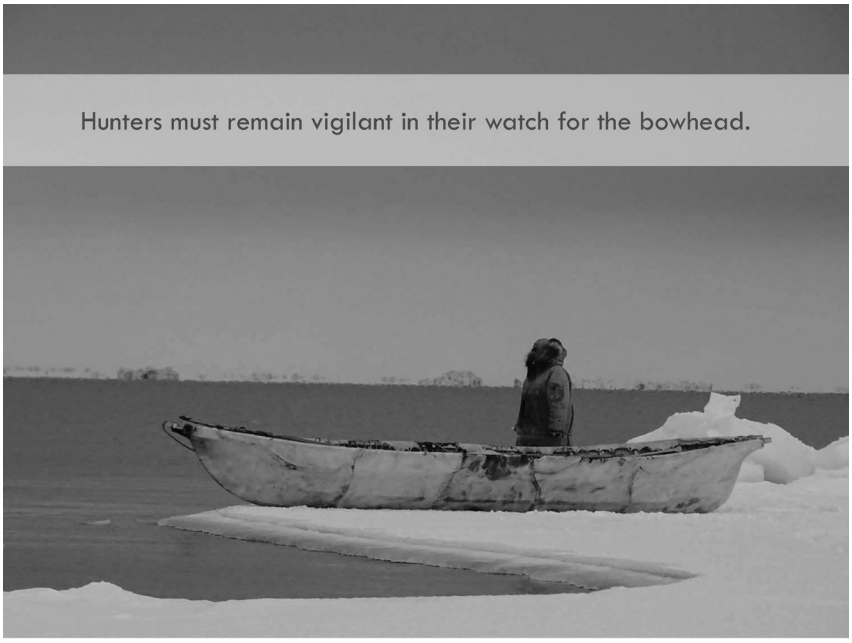


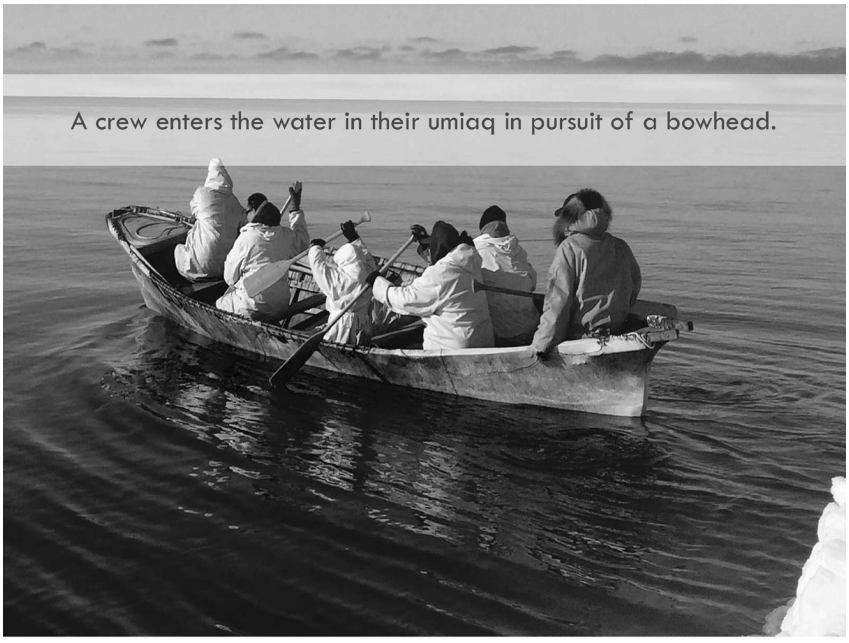
During the spring harvest, traditional seal skin boats (Umiaq's) are utilized by subsistence hunters.

Traditional harpoons, armed with modern explosives are placed by the ice edge in anticipation of the sighting of a bowhead whale.

Wind shelters are placed along the ice edge to protect hunters from the severe weather encountered in the arctic.

As hunters watch the ice for signs of bowhead, whaling captains share their knowledge with the next generation of hunters.


Hunters must remain vigilant in their watch for the bowhead.


A crew enters the water in their umiaq in pursuit of a bowhead.

A successful whaling crew receives assistance from surrounding crews in towing the bowhead to the ice edge.

Once on the ice edge, other hunters and community members join the crew to hoist the whale upon the ice.

A successful crew celebrates and gives thanks
for the bounty of the bowhead whale.

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The entire community comes together during a celebration to give
thanks for the successful harvest and to share the bounty.

Multiple generations come together
in gratitude and celebration.

It is the tradition that elders are served first during a feast —
most often by the youth in the community.

Following the feast, the community participates in traditional Eskimo festivities, such as the blanket toss.

The bowhead whale is essential to the cultural, traditional and nutritional vitality of the Eskimo culture.

With reverence for the bowhead whale and to ensure the survival of Eskimo culture, the traditional knowledge of the subsistence harvest is passed from one generation to the next.

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Our future is tied to our next generation of whaling captains.


Senator SULLIVAN. Thank you, Mr. Hopson.
Mayor Brower, 5 minutes. Thank you, sir. The floor is yours.

**STATEMENT OF HON. HARRY BROWER, MAYOR, NORTH SLOPE BOROUGH**

Mr. BROWER. Thank you. Good afternoon. My name is Harry Brower. I am a whaling captain, a former Chair of the AEWC, and currently Mayor of the North Slope Borough. Thank you for giving us the opportunity to be here and give you testimony about our bowhead whale subsistence harvest and the International Whaling Commission quota.

2017 marks 40 years since the IWC imposed its moratorium on our bowhead whale subsistence harvest. I was 18 at the time. In Barrow, we had been landing 15 to 18 whales every spring. These whales fed our entire community. The moratorium was lifted for subsistence whaling after the 1977 meeting.

But in the beginning, we would only have five strikes for Barrow. The rest of our villages were only allowed one or two. If a whale was struck and lost due to ice or sea state, that whale was a loss to our community and could not be replaced because of the harsh quota regime we were under.

The uncertainty we were thrown into caused terrible anxiety for our people, especially our elders. People were worried about how we were going to take care of our families. Some of our elders protested the way we were being treated. They were arrested and sent to jail.

All of this happened because of a misunderstanding at the International Whaling Commission. Federal scientists were sent to Bar-

row to count the whales, but they did not know proper technique for observing the whales, so they determined that the population was declining.

But if anyone had asked our whaling captains, they knew that our bowhead whaling stock was healthy and growing. The North Slope Borough hired our own scientists. Today, our research program is very highly respected throughout the world. The IWC's management of harvest is also very highly respected.

And we have a successful weapons improvement program that I chair. We have modified our handheld darting gun to accommodate a new projectile loaded with a high-powered explosive, penthrite. This has increased the efficiency and the animal welfare in our hunt.

Today, thanks to the hard work of the AEWC and the U.S. delegation, our IWC quota is at a level that meets our nutritional and subsistence needs, while other people and organizations are playing volatile games with IWC politics. They are using us as political pawns and threatening our quota whenever it comes up for renewal. Other people should not be able to use our critical nutritional and subsistence resources in a political game.

This is why we ask for your support on this legislation before you.

Thank you. I am happy to try to answer any of your questions, Mr. Chair. Thank you very much.

[The prepared statement of Mr. Brower follows:]

PREPARED STATEMENT OF HON. HARRY BROWER, MAYOR, NORTH SLOPE BOROUGH OF ALASKA

**Executive Summary**

2017 marks 40 years since the International Whaling Commission (IWC) imposed a moratorium on our bowhead whale subsistence harvest, based on faulty scientific research. Since then, the AEWC and North Slope Borough have proven the health of our bowhead whale stock, proven that our communities need the bowhead whale for nutritional and cultural survival, and have modernized our hand-held whaling equipment.

The AEWC now is a leader among subsistence hunting groups at the IWC. Our scientists are leaders at the IWC Scientific Committee and in the development, testing, and application of the computer algorithm used to determine sustainability in ours and other subsistence harvests.

*We are committed to working with the IWC and we are not here to ask for relief from our IWC responsibilities. We ask only to clarify the language of the Whaling Convention Act, to ensure that we can feed our families legally until the U.S. and the AEWC can convince the IWC members to reinstate our subsistence quota, should the IWC fail to act on a quota request.*

Setting our subsistence quota requires a 75 percent majority of IWC members. The IWC Convention requires quotas to be based on scientific proof of sustainability, yet quota decisions at the IWC are driven by politics, not science. IWC members are fragmented into political blocs, some comprising countries that strongly oppose any whaling, even for subsistence. In the past, our subsistence quota has been taken hostage in efforts to influence the U.S. on other issues.

This spring one of our young hunters took his first whale. He was brutally attacked on Facebook, including threats on his life, by anti-whaling groups who have influence at the IWC.

In 2002, without justification, the IWC ended its meeting with no decision on our bowhead quota. The U.S. had to organize an intersessional meeting to have our quota reinstated before our 2003 harvests. In 2012, the IWC allowed Greenland's subsistence quotas to expire; new quotas weren't set until 2014. Greenland hunters were branded as international outlaws for continuing to feed their families. We fear that this could happen to us.

The 2018 IWC meeting is in September. If the IWC fails to set our quota, the U.S. will have only 3½ months before our southern villages must begin hunting.

**Testimony**

Good afternoon, my name is Harry Brower. I was born and have lived all my life in Barrow, Alaska. I am the Mayor of Alaska's North Slope Borough and a former Chairman of the Alaska Eskimo Whaling Commission (AEWC).

I am a husband, father, whaling captain, and belong to a family with a long history of feeding the people of my community through our whaling practices. My grandfather, Charles Brower, was a Yankee whaler. My other ancestors go back to ancient times in the Arctic and ancient subsistence whalers. I have trained sons, grandsons, and nephews in our subsistence practices, and they will train the next generations.

Among our people, whaling captains are responsible for feeding the people of our community from the subsistence harvest of the bowhead whale. With this honor and responsibility also comes the responsibility for leadership within the community and the preservation of the health of our bowhead whale population.

We never harvest more animals, of any kind, than we need. We rely on traditional knowledge, our own observations, and on modern research methods to help us ensure that our subsistence harvests remain sustainable. For our bowhead whale harvest, we work very closely with our North Slope Borough scientists and rely on the state-of-the art analytical tools that they have helped to develop and that are now used by the IWC.

The North Slope Borough is home to almost 10,000 people and about 70 percent of us are Alaska Native *Inupiat,* who have called northern Alaska home for thousands of years. We have harvested the bowhead whale for as long as we have lived in the north. The seat of North Slope Borough government is *Utqiaġvik,* or Barrow. When I look south from my office, I see miles of tundra, rivers, lakes, lagoons, and marsh. Looking north, I am separated from the North Pole by nothing but miles of ocean and sea ice. It is true that our temperatures are warming, but our environment is no less harsh.

Aside from tundra, very little vegetation grows in the Arctic. To feed our families, we must hunt year-round. We harvest some terrestrial animals and birds. But the ocean is our garden. Our most important harvest times are the spring and fall, when our greatest resource, the bowhead whale, migrates past our villages. From a successful harvest, we feed our entire community and share with our families and neighbors throughout our region. The whale is central to our diet and culture, both within the North Slope Borough and in our neighboring communities.

Sharing is also central to our culture. It is what has enabled our people to survive the extreme conditions of the Arctic for these many centuries. Those who have, share with those who do not. We trade resources among families, villages, and regions. We are self-sufficient and resilient people. We take care of each other, and we take care of our resources. We also are patriots who respect our government and the rule of law. Many of our young men and women serve in the military.

When we were told of the IWC moratorium in 1977, I was still a boy, but I remember that time well. Because of the IWC ban, we were prohibited from taking the whales that we needed to feed our families. There simply wasn't enough to eat. There was terrible fear about what would happen to us. We couldn't understand how people from foreign countries, who had never been to the Arctic, could be allowed to take our food from us.

Today, the AEWC and North Slope Borough are leaders in research and cooperative management at the IWC. But in 1977, the researchers who came to look for the whales didn't know the whales' behavior and reported that they could find only 600–2,000 whales. As hunters, we spend our lives observing the ecosystem and the animals in it. Our whaling captains knew that there were 6,000–8,000 whales and that the population was growing rapidly.

The North Slope Borough hired our own scientists. My father, Harry Brower Sr., was a senior whaling captain at that time taught the scientists how to count the whales, by looking for them above and listening for them below the spring ice. Once they learned to do this, the scientists started to realize that our whaling captains' estimates of the population size were right and that they were correct in reporting that there were large numbers of calves being born each year. There still are.

That was the beginning of our bowhead whale research program. We have our elder whaling captains and the North Slope Borough to thank for making this program possible.

Today the North Slope Borough's Department of Wildlife Management runs an internationally acclaimed research program, monitoring our wildlife throughout the Arctic. Our scientists lead the United States' bowhead whale research effort, and

work closely with scientists from NOAA to present research results at the annual meetings of the IWC Scientific Committee.

As Mayor of the North Slope Borough, I am proud of our modern science facilities and research and analysis capabilities; researchers from universities and other facilities around the world travel to Barrow to work with our scientists and our hunters, and to conduct other arctic research. My father worked with the scientists throughout his life, helping them learn how to observe wildlife in the Arctic. I began working in the Department as a young man and grew up there, serving as Deputy Director before being elected North Slope Borough Mayor.

I also have attended IWC meetings for more than 20 years. I watched our North Slope Borough scientists grow into leadership at the Scientific Committee. As you heard from Mr. Hopson's testimony, one of our North Slope Borough scientists has already served as the Chair of the IWC's Scientific Committee. Dr. Suydam is now the Vice Chair of that Committee and will become the Chair next May. This is a great honor for all of us. It is a testament to the quality of the people who work with us. Even more, it is a testament to the dedication the AEWC and the North Slope Borough have to delivering sound research that promotes international understanding of our bowhead whale.

I also have had the honor of participating in the AEWC's rise in leadership at the IWC. Working with our U.S. Delegation, the AEWC helped to found the Aboriginal Subsistence Hunters' Caucus at the IWC, and chairs its meetings. We supported the U.S. in its efforts to form a caucus of the Aboriginal Subsistence Whaling Countries—United States, Russia, Denmark/Greenland, and St. Vincent and the Grenadines—and actively participate in those meetings. We supported the formation of and actively participate in the IWC's Aboriginal Subsistence Whaling Working Group, chaired by Dr. Mike Tillman, of the U.S.

The AEWC continues to work tirelessly to improve understanding of Aboriginal subsistence whaling at the IWC, always pushing the IWC toward science and away from politics in its decision processes. Our current IWC project, in addition to the renewal of our bowhead whale subsistence quota, is working with the U.S. Delegation to encourage the IWC to establish a Joint Committee, of the Commission and the Scientific Committee, to oversee and advise on Aboriginal Subsistence issues. Such a committee already exists to oversee and advise on conservation issues, including habitat conservation.

We believe that a joint Aboriginal subsistence oversight committee, including scientists and hunters, will provide an important opportunity to further facilitate the application of modern research and management technologies within the context of local observations and subsistence uses. All of this is aimed at continuing to improve our understanding of our bowhead whales and to ensure that our harvest remains sustainable for our future generations, even as the Arctic changes. We are excited by this idea and look forward to working with the U.S. and others on it at future meetings of the IWC.

Throughout our northern Alaskan communities, and especially among our whaling captains, we realize how fortunate we are to have the resources of the North Slope Borough to provide scientists and the means necessary to make this research possible. The North Slope Borough also is the largest financial backer of the Alaska Eskimo Whaling Commission.

We also are fortunate to have the wonderful working relationship that the AEWC and North Slope Borough have with NOAA, and we are very grateful for the annual grants the AEWC receives from NOAA to help support our research and the AEWC's management work. The AEWC works closely with the North Slope Borough and with NOAA to keep our research and management efforts well-coordinated.

In addition to demonstrating that our harvest is sustainable, the IWC insists that we must prove that we "need" the whale. The AEWC and North Slope Borough have worked with Stephen Braund, a very highly respected anthropologist in Alaska, for more than 30 years, helping him document and regularly update his report on our need for the bowhead whale.

Our resources, and especially the whale, also provide our identity. Throughout our communities, everyone participates together in the bowhead whale subsistence harvest. They either participate directly by working on a crew, or they participate indirectly by providing food, clothing, or cash for equipment and supplies to support a crew. And everyone receives the gift of the whale.

This is what the whale is to us, a gift from the maker of all things and it must be treated with the greatest respect. When a whale gives itself to a crew, before securing it for towing, the captain offers a prayer of thanks for the whale. This prayer goes out on the VHF radio; everyone who is on the water or in town stops what they are doing to give thanks for the whale.

When a whale is landed, residents throughout the community and even people from other villages come to help with dividing the whale. This is done very quickly and all shares are taken home to be stored immediately. The whaling captain and his wife take the largest share because we are responsible for feeding everyone in the community shortly after the hunt. The elders are fed first and anyone who happens to be in town is welcome to receive a meal at the whaling captain's house. It doesn't matter how long we have been out on the ice or the water hunting, we don't stop to sleep or even rest until everyone is fed and the whale that remains has been put away.

This is a joyful time and no one complains or can feel annoyed or angry. Whatever disagreements we might have with each other, whaling brings us together and makes us one.

Following a successful spring harvest, each whaling captain also hosts a *Nalukataq,* a community feast where we celebrate the harvest by sharing the whale with the community and all our out-of-town guests who come to join in the celebration. Children and the young join in, helping to distribute the food, and they are taught always to feed their elders first. We value the knowledge and wisdom of our elders who have been in this world longer than those of us who are younger, and we teach our children this respect from a very young age. For the *Nalukataq,* the captain takes the seal skins that covered his *umiaq* so that they can be used like a trampoline in our blanket toss. This is a very big celebration and a time of great joy in our villages.

As whaling captains, we also hold feasts at Thanksgiving and Christmas and continue to share our portion of the whale throughout the year. We are honored to be able to do this for our community.

Finally, it requires great skill to safely take a whale. As John indicated, we hunt from 6 to 8 man vessels, either *umiaqs* or motorized skiffs, and use hand-held weapons. The whales we bring in can be 40 to 50 feet in length, and the ocean is unforgiving. While we are hunting, or towing a whale, seas can change quickly, ice can move, and wind and weather can deteriorate very rapidly.

The whaling captain's greatest responsibility is the safety of his crew. Our goal, always, is to stay as close to shore as possible and to take the whale as quickly as we can.

Through our work at the IWC, we met and now work with an internationally recognized Norwegian expert in the humane killing of large animals. With Dr. Egil Oen's help, in the 1980s, we began developing a projectile that fits our hand-held darting gun and is armed with a high-powered explosive capable of killing a 50-foot whale instantaneously. During the research and development phase of this new weapon, our Barrow whaling captains volunteered for the field trials needed to refine and finalize the design. Today, this new projectile is used throughout our villages to improve the efficiency of our harvest and to allow us to take the whale in the shortest possible time.

I serve as the Chair of the AEWC's Weapons Improvement Committee. In addition to the improvement in our hand-held weapons, our Weapons Improvement Committee conducts regular training sessions so that we regularly improve the skills of our hunters. The more efficient and effective our hunters are, the safer we all can be when we are on the water.

As whaling captains and leaders in our community, we take great pride in our accomplishments at the IWC. That work and our consultations with the IWC Scientific Committee and with our Norwegian colleague are now integral to our local harvest management practices. We anticipate these types of collaborations, through the IWC, continuing for generations to come.

It is very sad to us that there are individuals and organizations so focused on their own political agendas that they would thoughtlessly take away our food, the foundation of our culture, and the legal right to our subsistence harvest, to pursue their own ends.

As unfortunate as this is, we know that it is a reality we must face. That is why we are here today. As long as the whales are healthy, our bowhead whale subsistence harvest is not optional for us. Like everyone, we must eat. We must feed our children, our elders, and our communities.

If politics causes the IWC to end a meeting without renewing our subsistence quota, like Greenland we may be forced to hunt without IWC sanction. Our harvest level will be limited by IWC Scientific Committee recommendations and we will continue working with the U.S. and the IWC until the IWC resets the quota.

We ask only that our hunters not be forced into a situation where they could be subjected to threats or accusations that they are outlaws for feeding their families. For this, we need your help. We hope you will support our proposed amendments to the Whaling Convention Act.

Thank you for hearing us today, and I am happy to try to answer any questions you might have about my testimony, our work at the IWC, or our bowhead whale subsistence harvest.

*Quyanak.*

Senator SULLIVAN. Thank you, Mr. Mayor, for that very powerful testimony. I look forward to having a good discussion when we get to the Q&A portion.

Dr. Suydam.

**STATEMENT OF DR. ROBERT SUYDAM, SENIOR WILDLIFE BIOLOGIST, NORTH SLOPE BOROUGH**

Dr. SUYDAM. Good afternoon, Senators. It is a privilege to speak before you today. Thank you for giving me some of your time.

My name is Robert Suydam. I have lived and worked in Barrow since 1990. I am a Senior Wildlife Biologist with the North Slope Borough Department of Wildlife Management. The North Slope Borough is the equivalent of a county government that encompasses the entire North Slope of Alaska. Our department includes seven Ph.D.-level biologists and veterinarians, and a similar number of subsistence hunters.

As you can imagine, it is unique for a municipal government to have its own research branch and a research science program. It shows, though, the commitment of the Inupiat of Northern Alaska for ensuring that high-quality data and traditional knowledge are available for making informed management decisions needed for sustainable harvest.

I have a Ph.D. from the University of Washington—go Dawgs, right?—and I have a Master's from the University of Alaska Fairbanks. I am currently the Vice Chair of the International Whaling Commission's Scientific Committee, and I will take over the Chair's position in May 2018. I also serve on the U.S. Marine Mammal Commission's Committee of Scientific Advisers.

Today, I would like to provide you with information about the population status of bowhead whales that occur in the Bering, the Chukchi, and the Beaufort Seas adjacent to Alaska.

The bowhead whale population is doing exceedingly well. It is healthy and growing. Our last count in 2011 showed that it contained almost 17,000 whales. When combined with past counts, the data show that the bowhead population has been growing at 3.7 percent per year since at least 1978. More details about the counts and the estimates are in my written testimony.

But if the rate of growth has continued, there are now about 20,000 to 21,000 whales in the population. And observations of record-high calf counts and harvested whales that are very healthy provide support for the assumption that the population has continued to grow.

Chairman Hopson and Mayor Brower provided you information about the size of the quota and some information about the harvest. I want to repeat one thing that John mentioned. That is the annual bowhead harvest by the AEWC is only a small percentage of the population. It is less than one-quarter of 1 percent of the population.

The Scientific Committee of the IWC confirms that the harvest is sustainable. Their conclusions are based on not only common

sense but also a sophisticated modeling tool called a strike limit algorithm, or SLA. The SLA for bowheads balances the possible conservation risk to the population while meeting nutritional and cultural needs of aboriginal people in Alaska and Chukotka.

SLAs have been rigorously tested using simulations. The SLAs are tested under a broad range of different situations to see if the SLAs respond appropriately. The question is really whether the SLA will reduce the quota when there is a conservation risk. So they have been tested under situations related to possible impacts from a rapidly changing Arctic, such as major dieoffs that could occur periodically.

Because of the successful testing, the Scientific Committee now uses the SLAs to provide advice to the IWC commissioners about safe subsistence harvest levels.

In the past, some member nations of the IWC have blocked the bowhead quota based on politics. It is important that the future efforts to renew the subsistence quota, whether set by the IWC or domestically by the U.S., be based primarily on information about the population, status, and health of the whales, and the documented need of subsistence communities.

The bottom line is the bowhead population is large and can easily sustain the level of harvest required to meet the needs of Alaskan Natives and Chukotkans.

The science about bowheads and the local management of the hunt by the AEWC provide justification and support for the quota request in 2018. We will collectively do all we can to continue to make data available to the IWC, the U.S. Government, and the broader science community.

Thank you again for the opportunity to speak today.

[The prepared statement of Dr. Suydam follows:]

PREPARED STATEMENT OF DR. ROBERT SUYDAM, SENIOR WILDLIFE BIOLOGIST, NORTH SLOPE BOROUGH

**Executive Summary**

The bowhead whale population along the coast of Alaska is healthy and growing. Our last count in 2011 showed that it contained almost 17,000 whales. When combined with past counts, the 2011 data show that the bowhead population has been growing at 3.7 percent per year since 1978. If this rate of growth has continued, there are now about 21,000 whales in the population. Observations of record high calf counts and harvested whales that are very healthy provide support for the assumption that the population has continued to grow.

The bowhead harvest by the Alaska Eskimo Whaling Commission and Chukotka Natives in Russia is only a small percentage (<0.25 percent) of the population. The Scientific Committee (SC) of the International Whaling Commission (IWC) confirms that the harvest is sustainable. Their conclusions are based on a sophisticated modeling tool (*i.e.,* a Strike Limit Algorithm) that evaluates the possible conservation risk to the bowhead population while also meeting nutritional and cultural needs of aboriginal people in Alaska and Chukotka.

In the past, some member nations of the IWC blocked the bowhead quota based on politics. It is important that future efforts to renew the quota, including in 2018, be based primarily on information about the population status and health of whales and the documented need of subsistence communities. The bottom line for bowhead whales is that the population is large and can easily sustain the level of harvest required to meet Alaska and Chukotka Native needs. The science about bowheads and the local management of the hunt by the Alaska Eskimo Whaling Commission provide justification and support for the quota request in 2018 and we will collectively do all we can to continue to make data available for making informed decisions in the future.

**Testimony**

My name is Robert Suydam. I am a Senior Wildlife Biologist with the North Slope Borough (NSB) Department of Wildlife Management. I have lived in Utqiaġvik (formerly known as Barrow) and worked for the NSB since 1990. The NSB is the equivalent of a county government that encompasses the entire North Slope of Alaska. Our Department includes 7 Ph.D. level biologists or veterinarians and a similar number of subsistence hunters. It is unique for a municipal government to have its own science program but shows the commitment of the Inqiaupiat of Northern Alaska to ensuring that high quality data are available for making the informed management decisions needed for a sustainable harvest.

I have a Ph.D. in Aquatic and Fishery Sciences from the University of Washington and a Master's in Biology from the University of Alaska, Fairbanks. I am the Vice-Chair of the International Whaling Commission's (IWC) Scientific Committee (SC) and will begin serving as Chair in May 2018. I also serve on the U.S. Marine Mammal Commission's Committee of Scientific Advisors. Today I would like to provide you with information about the population status of the bowhead whales that occur in the Bering, Chukchi and Beaufort seas.

Figure 1. Bowhead whales migrating past Point Barrow during spring (left). A subsistence harvested bowhead whale provides for the nutritional and cultural needs of Inuit in Alaska (right).

The bowhead population is doing exceedingly well. Our last successful count was *in 2011 when we estimated there were 16,820 whales (95 percent confidence interval: 15,176–18,643). Combined with past counts, the 2011 data show that the bowhead population has been growing at 3.7 percent per year since 1978 (95 percent confidence interval: 2.9 percent–4.6 percent).* Assuming this growth rate has continued, it is likely that the bowhead population now numbers near 21,000 whales. Recent data, including record high counts of bowhead calves seen during aerial surveys (flown by National Marine Fisheries Service [NMFS] with funding from the Bureau of Ocean Energy Management) this autumn, provide evidence that the population has continued to grow. Other supporting evidence that the population is growing is our Department's examination of harvested whales. Those animals are almost always healthy, in good body condition, and have surprisingly few diseases or parasites.

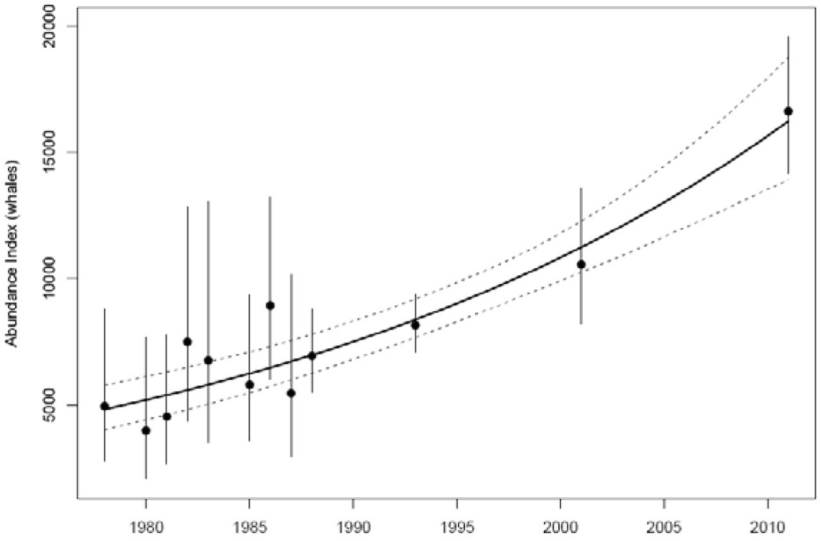



Figure 2. Bowhead whale population estimates (with corresponding 95 percent confidence intervals) from 1978 to 2011 showing a growth rate of 3.7 percent per year.

The SC uses population data and models to provide advice to the Commission about safe quota levels for subsistence harvests. The SC bases its advice on Strike Limit Algorithms (SLA), sophisticated and extensively tested computer models about whale population dynamics. The first SLA developed by the SC was for bowheads, initially implemented in 2003. SLAs now have been developed for most other subsistence stocks, including gray whales. SLAs give informed advice that balances the conservation of whale stocks with subsistence needs.

Most of the current quota for bowheads is used in Alaska. However, subsistence communities in Chukotka, that primarily harvest gray whales, also take a small number of bowhead whales on a periodic basis. Prior to 1997, the entire IWC quota for bowhead whales was used in Alaska. Since 1997, the U.S. and Russia have shared the IWC's bowhead whale quota pursuant to a bilateral agreement. The entire IWC quota for gray whales currently is used in Russia. When the U.S. again allows the Makah to harvest gray whales, the U.S. will need to negotiate a bilateral agreement with Russia for sharing the gray whale quota; it will not be necessary to seek a new gray whale quota from the IWC.

During their development, extensive testing of the SLAs was done by running trials called "simulations." The simulations tested the SLAs in a broad range of hypothetical, but feasible, situations, including major periodic die-offs of the whale population. Such die-offs do not appear likely at this time, but are feasible given the unknown effects of changing sea ice and climate conditions, or in the event of a major oil spill. The results for each simulation were then evaluated for how well they met the IWC's conservation goals for protecting whales and how well they met subsistence needs. Under those simulations, the SLAs appropriately reduced quotas when there was a need to conserve whales. The results of the evaluations led the SC to conclude that SLAs are the best tool for sustainably managing bowhead and other subsistence whale harvests.

Counts of bowheads were initiated by the National Marine Fisheries Service (NMFS) in the mid-1970s. Because of concerns within the North Slope community that NMFS was not listening to elders or expert hunters about proper counting methods, the NSB began counting bowheads in the early 1980s. Counts were conducted yearly but as data were collected, it was obvious that the bowhead population was growing steadily. Because of the high quality of the data and the life history traits of bowheads, the SC agreed that population estimates would only be needed every 10 years. Since our last count was in 2011, and it usually takes several years to successfully collect good data, we have already begun planning for a bowhead count in spring 2019.

Dr. Tom Albert, one of my mentors and predecessors, worked closely with Harry Brower, Sr., father of Mayor Harry Brower Jr., who you have also heard from today. Harry Sr. told Tom that bowheads were migrating beyond the view of whale counters and that whales were not afraid of sea ice. He said that bowheads continued to migrate under the ice even when there was no visible open water. Whales could break through ice to make their own breathing holes. Because of this advice, the bowhead count broke new ground by monitoring the calls and songs of whales to adjust the visual counts for whales that passed beyond the view of counters. This novel approach was the first time acoustic recordings were used to estimate the size of a whale population, but is now regularly used to monitor other marine mammal populations.

Hunters inform NSB scientists about many other aspects of the biology and population status of bowheads. They also help to keep us safe while we work on the sea ice counting whales and collecting biological samples from harvested whales. Hunters participate in many other aspects of science such as tagging bowheads with satellite transmitters.

For the past 35 years, the NSB has invested heavily in bowhead science, with additional support from NMFS, oil companies and others. We work with scientists from across the U.S. and around the world. Our program is highly regarded and well published. Hundreds of peer-reviewed publications and numerous theses and dissertations have resulted from the research. One of our statisticians, Judy Zeh from the University of Washington, has worked with us since the early 1980s. She has been instrumental in a variety of aspects of our program and she served as the IWC SC chair from 2000 to 2002. The bowhead program brings to the IWC a balanced approach to management of whales. The respect for the bowhead science program is reflected in Judy's roll as a past Chair of the SC and my upcoming role as Chair.

The scientific results from the bowhead science program are valuable but more importantly the NSB's investment has resulted in successful population counts and the construction and implementation of the bowhead SLA. The tools and scientific information are available for making informed decisions about a sustainable bowhead quota that also meets subsistence needs.

The bowhead science program is also valuable as the Arctic is changing rapidly and dramatically. The combination and integration of science and traditional knowledge is essential for collecting information to support informed decision-making in the Arctic. Right now bowheads are responding well to reductions in sea ice. Whales, especially immature whales are in better body conditions in years with less ice in the Beaufort Sea than in years with more. It is likely that more sunlight penetrating the water has increased productivity, resulting in more food for bowheads. Even though bowheads are doing well, the changes in sea ice are making it more difficult for whale hunters and scientists. We are struggling to deal with the thinner and less safe ice. We do not have substantial pressure ridges in the shore-fast ice from which to count whales. We are concerned that it will be more and more difficult to count bowheads in the future, but we are actively considering new approaches and options.

In the past, some member nations of the IWC blocked the bowhead quota request for political reasons. It is important that future efforts to renew the quota, including in 2018, be based primarily on information about the population status of whales and the documented need of subsistence communities. The bottom line for bowhead whales is that the population is large and can easily sustain the small harvest required to meet Alaskan and Chukotkan Eskimo subsistence needs. The science about bowheads and the local management of the hunt by the Alaska Eskimo Whaling Commission provide justification and support for the quota request in 2018 and we will collectively do all we can to continue to make data available for making informed decisions in the future.

Thank you for allowing me to provide you some information about the science and management of bowhead whales. I would be happy to try to answer your questions.

Senator SULLIVAN. Thank you, Dr. Suydam.
President Swartz.

## STATEMENT OF CHRIS SWARTZ, PRESIDENT, THE KEWEENAW BAY INDIAN COMMUNITY

Mr. SWARTZ. Good afternoon, Chairman Sullivan, Ranking Member Peters, and members of the Subcommittee.

My name is Chris Swartz, and I am the President of the Keweenaw Bay Indian Community. The Keweenaw Bay Indian Community is the oldest and largest reservation in Michigan. We live on the shores of Lake Superior, Keweenaw Peninsula, and Michigan's Upper Peninsula.

Thank you very much for the opportunity to appear before you today. I am here today representing my tribe, but we are not the only federally recognized tribe that is deeply concerned about the protection of our natural resources so we may exercise our treaty rights. The threats to those rights and the intergovernmental co-management are important to all 11 tribes who are members of an organization called the Great Lakes Indian Fish and Wildlife Commission.

The Great Lakes Indian Fish and Wildlife Commission is an extremely important organization made up of 11 tribes that retain treaty rights to hunt, fish, and gather in the treaty's territory ceded to the United States in the mid-1800s. Vast portions of Lakes Superior, Huron, and Michigan, were ceded in the treaties of 1836 and 1842. These treaties were made and are made between nations and are as relevant as treaties with our Canadian neighbors. Over the years, Federal and State courts have affirmed our treaty reserve rights to hunt, fish, and gather off our reservations on those ceded lands around the Great Lakes.

These rights were not granted in the treaties without purpose. They were reserved by our ancestors to provide for the continuation of our way of life.

For the Keweenaw Bay Indian Community, as well as other tribes, our reservations on the shores of Great Lakes have depended on healthy and robust Great Lakes fisheries for thousands of years. Today, we struggle to maintain this culturally significant practice to provide the extremely important food source we need.

This sustenance resource is not only physical. It is also spiritual, culturally important, and medicinal.

As I sit before you, Mr. Chairman, with my fellow witnesses from Alaska who are able to feed their communities while the fisheries in Alaska do so much to feed the world, I have to be honest with you and the rest of the subcommittee. The truth is that, after they clear cut our forests and mined copper, iron ore, and other metals across our ceded territory to build Detroit, Chicago, Milwaukee, and many other cities, our ability to thrive as a fishing tribe was decimated.

While those cities were being built, our fish fed the occupants of many of those rapidly growing cities. Had that not taken place, I assure you, we would be competing with Alaska on the commercial fishing front.

Today, as a result of mining activity in our ceded territory, there is an ever-increased direct threat to the fishery resources on Lake Superior, especially to lake trout and whitefish. A highly important whitefish and lake trout spawning reef near Grand Traverse Harbor is being literally smothered by mining waste.

This threat, if left unaddressed, would undermine the progress made in restoring a self-sustaining lake trout fishery in Lake Superior. In addition, in failing to uphold our international agreement with Canada in this regard, this threat further undermines the

ability of my tribe and others to sustain themselves through the harvest and sharing of fish.

Mining waste called "stamp sand" was dumped along the eastern shore of Lake Superior's Keweenaw Peninsula during the late 1800s and early 1900s. The stamp sands destroy a spawning reef by filling in the cobbled substrate where the fish lay their eggs. The stamp sands also contain high levels of copper, mercury, arsenic, and other contaminants toxic to aquatic life. As such, juvenile fish are not found in shoreline habitats that are covered in stamp sands along this reef.

The Great Lakes Indian Fish and Wildlife Commission were pioneers in identifying this problem and have been more than just advocates in identifying a solution. My tribe and other Great Lakes tribes will depend on the Great Lakes Indian Fish and Wildlife Commission to work with many others to solve this problem and fulfill the obligation of international treaties and agreements with Canada.

We are taking action. Federal, State, and tribal managers have coordinated to take immediate steps to protect the viable portion of the reef. This past summer, dredging of stamp sands occurred in Grand Traverse Harbor and the adjacent beach area.

In addition, funds were committed to dredge a trench or trough that has protected the reef but has now filled up with stamp sands. This dredging is estimated to provide 3 to 5 years of protection for the reef, but the trough will refill and stamp sands will again encroach upon the reef.

A Federal, State, tribal task force is now being established to explore long-term solutions to the problem and identify sources of funding. There is no one partner that can accomplish this work. Commitment and cooperation by all affected governments will be necessary.

In closing, I respectfully request congressional support of the intergovernmental task force created to develop locally driven solutions. Much of this effort comes from funding available through congressional appropriations for the Great Lakes Restoration Initiative, including and especially funding for the appropriate and legitimate roles of tribes as partners.

With this effort, we can prevent the damage occurring at the spawning reef and actually make some semblance of progress in restoring the tremendous potential for the Great Lakes to become on par with Alaska in feeding an ever-growing world. After all, a healthy and well-fed world is a safer world for all of us in the United States of America.

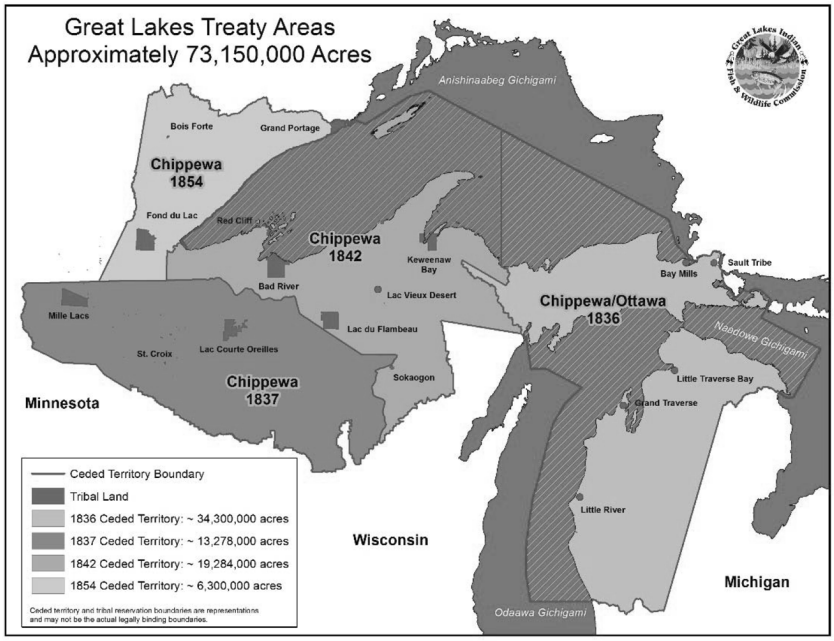
Thank you again for this opportunity. I would be happy to answer any questions you have.

[The prepared statement of Mr. Swartz follows:]

PREPARED STATEMENT OF WARREN C. SWARTZ, PRESIDENT, KEWEENAW BAY INDIAN COMMUNITY

Chairman Sullivan, Ranking Member Peters and Members of the Subcommittee, my name is Chris Swartz and I am the President of the Keweenaw Bay Indian Community. The Keweenaw Bay Indian reservation is located near the town of Baraga, Michigan on the east side of Lake Superior's Keweenaw Peninsula. Thank you for the opportunity to appear before you today.

I am here today to represent my tribe, but my tribe is not the only one concerned about our subsistence rights and threats to those rights, and interested in demonstrating how international treaties can provide models for intergovernmental co-management, respect, coordination and problem solving.




My tribe is a member of an intertribal agency known as the Great Lakes Indian Fish and Wildlife Commission (GLIFWC).[1] GLIFWC is made up of eleven Ojibwe tribes[2] that hold treaty reserved rights to hunt, fish and gather in territory that we ceded (or sold) to the United States in Treaties in the mid-1800s (see map). As relevant to this hearing, portions of Lakes Superior, Huron and Michigan were ceded in the Treaties of 1836 and 1842.[3] GLIFWC assists its member tribes in implementing their off-reservation treaty rights.

Treaties were and are made between nations. Thus we must consider the treaties that were made between the young United States and tribal nations that predated the arrival of Europeans in addition to relevant treaties with our Canadian neighbors. Federal and state courts have affirmed our treaty-reserved rights to hunt, fish and gather off our reservations on ceded lands. [4] These rights were not granted in the treaties, rather they were reserved by our ancestors to provide for the continuation of our way of life as we had always lived it on the region's lands and waters. The Keweenaw Bay Indian Reservation, created by the Treaty of 1854, is but a small part of our much larger ancestral homeland, which was ceded to the United States in these earlier treaties.[5]

The Keweenaw Bay Indian Community, as well as other tribes located around Lake Superior, are and have always been, fishing tribes. Since time immemorial, these tribes have used the resources provided by gitchi-gami (or Lake Superior) to

[1] For more information, *see www.glifwc.org.*

[2] GLIFWC member tribes are: in Wisconsin—the Bad River Band of the Lake Superior Tribe of Chippewa Indians, Lac Courte Oreilles Band of Lake Superior Chippewa Indians, Lac du Flambeau Band of Lake Superior Chippewa Indians, Red Cliff Band of Lake Superior Chippewa Indians, St. Croix Chippewa Indians of Wisconsin, and Sokaogon Chippewa Community of the Mole Lake Band; in Minnesota—Fond du Lac Band of Lake Superior Chippewa, and Mille Lacs Band of Ojibwe Indians; and in Michigan—Bay Mills Indian Community, Keweenaw Bay Indian Community, and Lac Vieux Desert Band of Lake Superior Chippewa Indians.

[3] *See* Treaty of 1836, 7 Stat. 491. *See,* Treaty of 1842, 7 Stat. 591.

[4] *See, e.g., People of the State of Michigan v. Jondreau,* 384 Mich. 539, 185 N.W. 2d 375 (Mich. 1971), and United States v. Michigan, 471 F.Supp. 192 (W.D.Mich. 1979).

[5] *See* Treaty of 1854, 10 Stat. 1109.

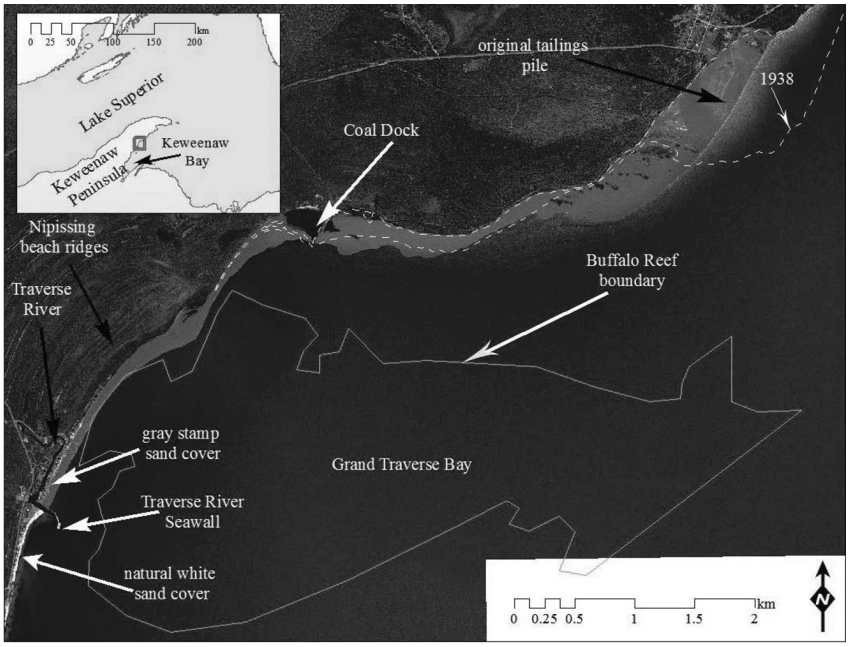
sustain their communities. This sustenance is not only physical; it is also spiritual, cultural, medicinal and economic. These tribes, in our first treaty (with the Creator) accepted a responsibility to protect and sustain the natural resources that provide for the lifeways of our people. We have hundreds of years of experience exercising this responsibility, and can bring a wealth of traditional ecological knowledge to bear on natural resource management questions. In modern times, we welcome and actively participate in partnerships with like-minded agencies that are also stewards of these natural resources.

The history of cooperative, coordinated fishery management in the Great Lakes is both interesting and instructive. During the late 1800s and through the first half of the 1900s, the Great Lakes states and Ontario tried unsuccessfully to create cooperative fishery management mechanisms. It was only after the invasive sea lamprey began to devastate the lake trout fishery that the jurisdictions realized their problems could not be solved individually—they needed to work together with the aid of the Federal government. The 1954 Convention on Great Lakes Fisheries—a treaty between the U.S. and Canada—created the Great Lakes Fishery Commission and committed the parties to control sea lamprey, advance shared science, and help agencies work together.[6] The Convention did not, however, divest the states, the province, or the tribes of their management authority. In fact, tribes became active partners in the Fishery Commission's structures after state and Federal courts reaffirmed their treaty-reserved fishing rights.

There are a number of mechanisms set up under the Fishery Commission that provide for the cooperative, coordinated exercise of each jurisdiction's management authority—state, provincial and tribal—with the assistance of the Federal governments. These mechanisms demonstrate an approach that is bottom-up rather than top-down, and respects each jurisdiction's expertise, knowledge and management authority. The Federal government assists in coordination but does not prescribe outcomes.

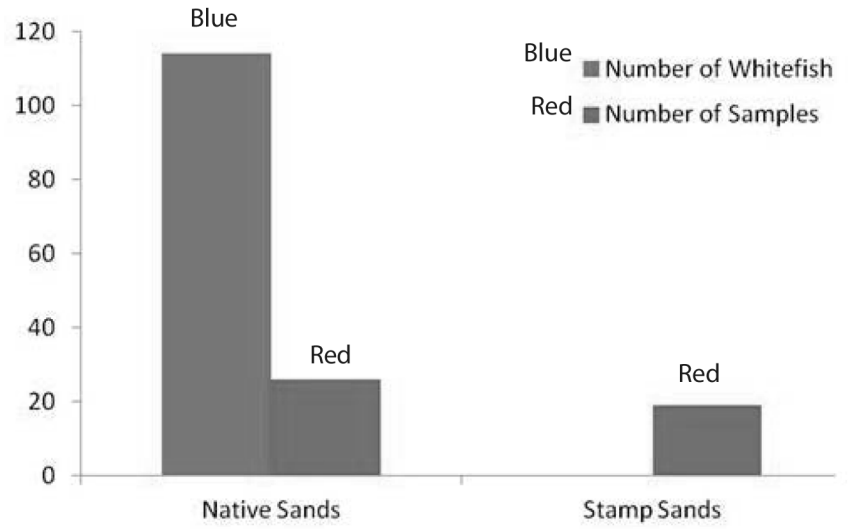
There are many threats to Lake Superior's fishery in addition to sea lamprey. I would like to tell you about one other particular threat that would, if left unaddressed, undermine the significant progress that the partners have made in restoring a "self-sustaining" lake trout population, a status that was declared in 1996. This threat also undermines the ability of my tribe and others to sustain themselves through the harvest and sharing of fish, and undermines the obligation of the United States to uphold its treaty guarantees. An important whitefish and lake trout spawning reef is being smothered with what are known as stamp sands—mining waste that was dumped into Lake Superior and on its shoreline during the late 1800s and early 1900s. The stamp sands are destroying the spawning reef by filling in and contaminating the cobble substrate where the fish lay eggs. The stamp sands are high in copper, mercury, arsenic and other contaminants toxic to aquatic life, illustrated by the fact that juvenile fish are not found in shoreline habitats that are covered in stamp sands (see chart, below). At present, approximately 35 percent of the reef is no longer viable because it is covered with an inch or more of stamp sands; modeling predicts that by 2025, 60 percent of the reef will no longer be viable for lake trout and whitefish spawning.

[6] For more information, *see www.glfc.org.*




The Great Lakes supports a $7 billion commercial, subsistence and recreational fishery, including associated tourism expenditures and more than 75,000 direct and indirect jobs.[7] In Michigan waters of Lake Superior, Buffalo Reef is estimated to supply 23 percent of the tribal commercial harvest of lake trout, and the loss of this habitat would likely result in the loss of approximately 125,000 pounds of whitefish and 12,500 pounds of lake trout annually. If the reef is lost, over $1 million in tribal fishing jobs would also be lost.[8] There would be additional impacts to the recreational fishery as well as to local businesses that rely on locally caught fish. At one time, the Great Lakes fed the cities of Chicago and Detroit. As the population continues to grow, their economies can only be helped by a productive fishery. Not only can the Great Lakes fisheries continue to feed the populations of these cities, but the recreational fishing industry is a growing source of a healthy economy in this region. Both depend on healthy ecosystems and resources.

[7] *See http://www.glfc.org/the-fishery.php*
[8] Great Lakes Indian Fish and Wildlife Commission, unpublished data.




Buffalo Reef is also an important source of genetic diversity to Lake Superior. Fish tagged on the reef have been caught as far away as Pancake Bay, Ontario and the western arm of Lake Superior.[9]

In addition to the treaties with tribes and the Convention on Great Lakes Fisheries, another treaty has bearing on this issue. The Boundary Waters Treaty of 1909 obliges the U.S. and Canada "not to pollute" the boundary waters.[10] That obligation has been implemented through an agreement, known as the Great Lakes Water Quality Agreement (GLWQA), which was first signed in 1978. In 2012, it was updated with the signing of a Protocol that explicitly reaffirms "the rights and obligations of both countries under the *Treaty relating to the Boundary Waters and Questions arising along the Boundary between Canada, and the United States* done at Washington on 11 January 1909 (Boundary Waters Treaty) and, in particular, the obligation not to pollute boundary waters;".[11]

The GLWQA is an agreement between the U.S. and Canada, but, like the Convention on Great Lakes Fisheries, its goals cannot be accomplished without the participation of the other governments with management authority over the fishery, including tribes that hold rights reserved in treaties equal in stature to the Boundary Waters Treaty. Tribes have management authority relative to their treaty rights, and must be "in the room and at the table" with other governmental partners when natural resource decisions are being made. This requires that equitable funding be available to support the capacity of tribes to participate in these partnerships and to develop the science and management expertise that they need to be effective partners.

There are a number of mechanisms for coordination under the auspices of the GLWQA, including intergovernmental working groups that are producing Lakewide Action and Management Plans (LAMPs) for each of the Great Lakes. In Lake Superior, this type of coordinated, binational state, federal, tribal and provincial partnership has been ongoing since the early 1990s. The most recent LAMP, produced in 2015, identifies actions to restore and protect Buffalo Reef as a priority project from a lakewide perspective.[12] The National Oceanic and Atmospheric Administration (NOAA), the U.S. Army Corps of Engineers, the Environmental Protection Agency, and the Bureau of Indian Affairs as well as state and tribal governments have committed to take actions to further this work.

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[9] Great Lakes Indian Fish and Wildlife Commission, unpublished data.

[10] Boundary Waters Treaty of 1909, 36 Stat. 2448. Article IV.

[11] *See,* Protocol Amending the Agreement Between Canada and the United States of America on Great Lakes Water Quality, 1978, as Amended on October 16, 1983 and on November 18, 1987, at *http://www.ijc.org/en_/Great_Lakes_Water_Quality*

[12] Lake Superior Lakewide Action and Management Plan, *https://www.epa.gov/sites/production/files/2016–10/documents/lake_superior_lamp_2015-2019.pdf.* Page 8.

And they are taking action—federal, state and tribal managers have coordinated to take immediate steps to protect the viable portion of the reef. This past summer, stamp sand dredging occurred in Grand Traverse Harbor and the adjacent beach area. In addition, funds have been committed to dredge a trench, or trough, that has protected the reef, but which has now filled up with stamp sands. This dredging is estimated to provide 3–5 years of protection for the reef, but the trough will refill and stamp sands will again encroach upon the reef. A Task Force led by federal, state, tribal agencies is now being established to explore long term solutions to the problem and identify sources of funding. The Task Force will include other stakeholders as well, including Michigan Technological University. There is no one partner that can accomplish this work alone, commitment and cooperation by all affected governments and parties will be necessary.

There is an important role for Congress here as well. Congress can:

- support the work of the intergovernmental Buffalo Reef Task Force as it develops appropriate, locally driven long term solutions that will have benefits at a basin-wide scale;
- support funding at no less than $300 million for the Great Lakes Restoration Initiative (GLRI), which is doing so much to enable the protection and restoration of the Great Lakes;
- support the appropriate and legitimate role of tribes to be "at the table" as full partners in the development and implementation of solutions that will both restore the reef and protect it from further damage. The GLRI has provided an important source of funding to KBIC, other Great Lakes tribes, and to GLIFWC so that they have the capacity to carry out these roles; and
- recognize that the United States' treaty obligations require the restoration of this reef. Habitat destruction creates a backdoor abrogation of the treaties between the United States and tribes; treaty reserved rights are diminished when the resources that are the subject of those rights are destroyed.

Lake Superior is an invaluable resource. The restoration and protection of Buffalo Reef will have long-term benefits for tribes and the continuation of their lifeways, as well as provide broad benefits to the region and all the communities that value the greatest of the Great Lakes, gitchi-gami. Finally, I respectfully invite the Chair, Ranking Member, and any or all members of this Subcommittee to tour Buffalo Reef and to visit the L'Anse reservation, the oldest and largest reservation in Michigan.

Senator SULLIVAN. Great. Thank you, President Swartz.

And thank you, gentlemen, for the testimony. It was outstanding, as expected.

Let me begin with some questions. I will start with Mayor Brower.

Just for the audience's context and those who might be watching on TV, the North Slope Borough over which the mayor is the mayor is about the size of Wyoming, larger than 39 of the United States' States. So it is a rather large territory, even for Alaska.

Mr. Mayor, can you please discuss, you touched on it in your testimony, but a little more deeply, if you might, the cultural significance of the subsistence whale harvest in the communities you represent? For example, what happens in a community following the successful hunt of a bowhead whale?

Mr. BROWER. Senator, thank you for the question. I have to start with my own community. I reside in Barrow. I was born and raised there.

Whaling is a very spiritual tradition we practice in our communities. This is something that is taught to us at a young age. Our parents teach us how to store food and gather food for the oncoming season, sharing traditions passed on from generation to generation, storing resources that we harvest. The bowhead whale is one of them that is a very important resource to our villages, teaching the young the proper methods of butchering is part of that practice. Putting food away in a method that we utilize for oncoming cele-

brations once a successful landing of a whale has occurred, that kind of practice we continue to teach today.

The celebrations are very significant in my area. The spring hunt starts in the April and May timeframe. We conduct our hunting activities of the subsistence harvest of a whale. Once a whale has been landed, it is brought up on ice and butchered and brought into the community. Sharing occurs at that time from the home of the captain, sharing and cooking, preparing food to be distributed to about 2,500 to 3,000 people in one day, the day after the harvest. That is very significant.

This kind of practice, we include the whole family, young and old. They take part in preparing that food to be distributed to the people in the community. The sharing continues in the fall during Thanksgiving and Christmas. We take the remaining portions that have been left in ice, and they are brought out, butchered. After the butchering occurs, they are shared in smaller portions to be distributed in the church for the people sitting in the church wanting to receive shares of that meat that we serve at that time.

Senator SULLIVAN. So it is cultural and nutritional?

Mr. BROWER. It is cultural and nutritional, yes, very significant in our community, to that end.

Senator SULLIVAN. Great. Thank you.

Chairman Hopson, since 1981, the AEWC has helped manage the bowhead whale harvest. Can you explain the role that the AEWC plays with regard to conservation and management? In addition, you both talked eloquently about the IWC. But what does the organization that you are Chair of do? And how important a role does it play?

Mr. HOPSON. Thank you, Senator, for that question. The AEWC manages the bowhead subsistence harvest under a cooperative agreement with NOAA. We are responsible for implementing the IWC quota on our bowhead whale subsistence harvest and ensuring that our villages and whaling captains abide by the quota and other IWC mandates.

Our cooperative agreement is accompanied by a management plan that contains regulations governing our harvest. We ensure compliance with this management plan, and we consult with NOAA and impose penalties, if need be.

Senator SULLIVAN. Do you think that the IWC and the Whaling Convention Act are working well as it relates to your work and subsistence opportunities for Alaskan Natives? And if not, what should we be looking at in terms of improvement?

Mr. HOPSON. The IWC is no guarantee. As stated earlier, we have to receive 75 percent of their vote to get our quota. A lot of the countries that are in the IWC are antiwhaling. That is going to be a challenge on our delegation's part.

The Whaling Convention Act does not provide us any protection. It has the opportunity for us to go to court. An injunction can be filed. As you know, with the Makah whalers, that can take a lot of time as well. That would lead us to not whaling for our people.

Senator SULLIVAN. Great. Thank you. Very, very informative. I appreciate the insights that you are providing us.

Senator Peters.

Senator PETERS. Thank you, Mr. Chairman.

Thank you to our witnesses. Fascinating testimony from all of you. You have done an outstanding job.

President Swartz, I appreciate your comments on stamp sands. I am going to get to you in a minute.

But before I do that, I want to recognize some other folks who care deeply about this issue. Those are folks from Lake Linden High School who actually came into my office earlier this spring and visited to talk about some of the work that they have been doing in this area.

They tested how different plant species grow on stamp sands, and having plants growing on these sands could possibly help stabilize them and reduce erosion.

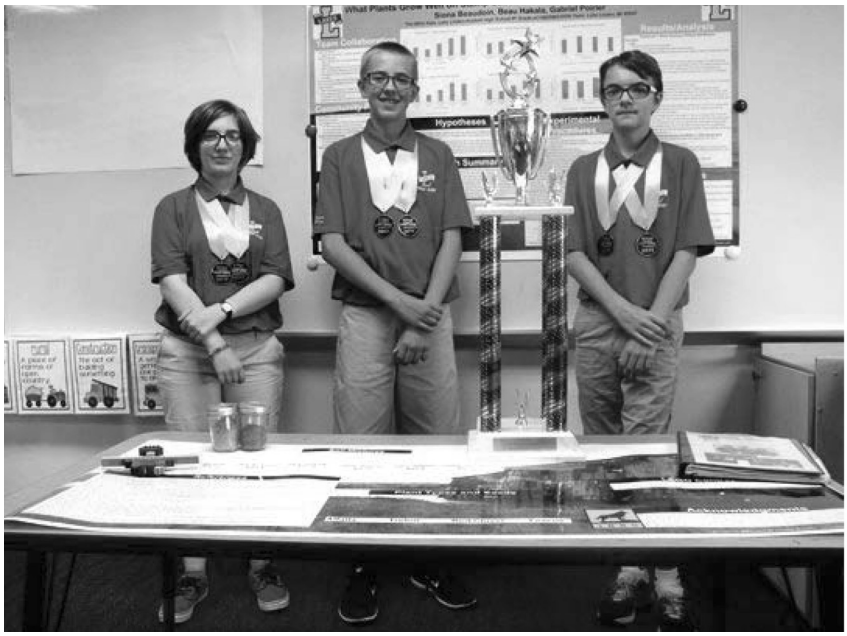
So, Mr. Chairman, I ask that an article describing their work from the Houghton, Michigan's *Daily Mining Gazette* be entered into the record.

Senator SULLIVAN. Without objection.

[The information referred to follows:]

*The Daily Mining Gazette*—10/30/2017

STAMP SAND RESEARCH PROJECT WINS NATIONAL COMPETITION




Garrett Neese/Daily Mining Gazette Lake Linden High School ninth-graders Siona Beaudoin, Beau Hakala and Gabe Poirier pose Thursday with their first-place trophy from the national eCYBERMISSION competition. They won in June for their project on which plants grow best in stamp sands.

LAKE LINDEN—Fresh off winning a nationwide competition, the three Lake Linden High School ninth-graders on Lake Linden's eCYBERMISSION team are making another run.

Siona Beaudoin, Beau Hakala and Gabe Poirier won first place in June at the national competition, sponsored by the U.S. Army. Their project measured the types of plants that grow best in stamp sands to combat erosion.

The team planted four plants—red fescue, red clover, treefoil and alfalfa—in mixtures with five percentages of stamp sand—0, 25, 50, 75 and 100. Of those, fescue and alfalfa fared the best in full stamp sand.

At the national competition in June, the team gave a four-minute presentation to five judges. After the presentation, the judges toured the teams in groups of two, two and one and questioned the teams in 10-minute sessions. Those questions covered topics like how the experiment would benefit the community, what they could have done better and how they conducted the experiment.

*"What 'stamp sand' was was a question that came up a lot,"* Hakala said.

Being questioned by the judges was nerve-wracking, all three said, but, Hakala said, *"it was a good experience in D.C."*

On the final day of the trip, the winners were announced at a luncheon. The team was surprised by the win.

*"We didn't get up for a few seconds,"* Poirier said.

While in Washington, the team visited the National Mall and met with U.S. Sens. Gary Peters and Debbie Stabenow, as well as doing a virtual presentation broadcast on the national Science and Teachers Association website.

The team was advised by Lake Linden teacher Nick Squires; Gretchen Hein, a senior lecturer at Michigan Technological University; and Ryan Knoll, a chemical engineering student at Tech.

In the months leading up to the trip, the team made presentations to the Lake Linden School Board, the Lake Linden Village Council, professors at Michigan Technological University, Department of Natural Resources and U.S. Rep. Jack Bergman.

For the next year, the team will do another experiment related to stamp sand. Because of rules regarding how much research can be carried over to the next year, it probably won't involve growing plants, Beaudoin said.

*"We were competing with a bunch of big private schools, so I guess even though we come from a small area with a really small school, we can still do big stuff,"* she said.

Senator PETERS. I have another letter as well from the Council of Lake Committees, which supports the stamp sands remediation. If that could be entered into the record?

Senator SULLIVAN. Without objection.

[The information referred to follows:]

COUNCIL OF LAKE COMMITTEES
*Ann Arbor, MI, October 30, 2017*

Ms. TINKA HYDE,
U.S. EPA—Great Lakes National Program Office,
Chicago, IL.

Dear Ms. Hyde:

As chair of the Council of Lake Committees (CLC), I am writing to express support for the Keweenaw Stamp Sands Project and protection of Buffalo Reef in Lake Superior near Gay, Michigan. This project proposes to dredge stamp sands from the trough adjacent to the reef, remove stamp sand s from the beach adjacent to the reef and stabilize the source pile to prohibit further migration of the stamp sands. The CLC consists of senior-level managers from state, tribal, and provincial fishery management agencies on the Great Lakes. By facilitating communication and part ner ship among agencies, the CLC develops management and restoration plans, as well as addresses mutual fishery objectives.

In 2009, the Great Lakes Fishery and Ecosystem Restoration Project Review Committee recommended, and the CLC approved, the Keweenaw Stamp Sands Project as a high priority. This project is critical to protect and restore fisheries habitat in Lake Superior, which is threatened by copper mine waste. Two copper mines, operating between 1898 and 1932, dumped more that 25 million tons of waste (*i.e.,* stamp sands) into the Lake Superior Basin. These stamp sands contain high amounts of copper and arsenic and cover 1,426 acres of shoreline and lakebed to date. The stamp sands have been migrating along the southeast shoreline of the Keweenaw Peninsula from near Gay, Michigan to Grand Traverse Bay Harbor, Lake Superior and are threatening to cover near by Buffalo Reef. Buffalo Reef is one of the most productive Lake Trout and Lake Whit efish spawning areas in Keweenaw Bay. As a part of a lakewide plan to rest ore Lake Trout in Lake Superior, more than 1.6 million Lake Trout were stocked on Buffalo Reef to re-establish popu-

lation. Successful rehabilitation has occurred, but continued degradation of the reef could undo this success that was accomplished by more than 30 years of stocking. The stamp sands also threaten habit at for juvenile fish along the shoreline south of the Traverse River. Currently, it is estimated that the reef is 35 percent covered with stamp sand s, and within the next 10 years, 60 percent of the reef will be covered if stamp sands are allowed to continue to migrate.

The CLC applauds the commitment of the U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers to develop and fund a short-term solution to the stamp sands migration issue an d strongly encourages the EPA to advance funding to develop and implement a long-term solution. The loss of Buffalo Reef spawning habitat could undo more than 50 years of Lake Trout rehabilitation in this area and substantially reduce or eliminate reproduction of Lake Trout and Lake Whitefish in Keweenaw Bay. If the stamp sands continue to pollute Buffalo Reef and the surrounding area, the Lake Superior Committee's ability to achieve its Fish Community Objectives will be compromised, and tribal, commercial, and recreational fisheries in the region will be eliminated or reduced.

Sustaining Great Lakes fisheries, and their many economic and societal benefits, is an important consideration of the CLC. As such, the CLC greatly appreciates the EPA's willingness to support a long term solution to the stamp sands problem. Please do not hesitate to contact Dr. John Dettmers (Great Lakes Fishery Commission, *jdettmers@glfc.org)* if you have any questions or would like additional information.

Sincerely,

BRIAN LOCKE,
*Chair,*
Council of Lake Committees.

xc:
Kevin O'Donnell, U.S. EPA Focus Area 4
Lori Ann Sherman, Natural Resources Director, Keweenaw Bay Indian Community, Buffalo Reef/Stamp Sands Task Force Steering Committee, Tribal rep
Anthony (Tony) Friona, U.S. Army Corps of Engineers, Buffalo Reef/Stamp Sands Task Force Steering Committee, Federal rep
Steve Casey, Michigan Department of Environmental Quality, Buffalo Reef/Stamp Sands Task Force Steering Committee, State rep
Steven Check, Project Manager U.S. Army Corps of Engineers, Detroit District
Steve Hewett, Lake Superior Committee
Phil Schneeberger, Lake Superior Committee
Jim Dexter, MDNR Fisheries Division
Bob Lambe, Great Lakes Fishery Commission

Senator PETERS. Thank you, Mr. Chairman.

President Swartz, before we get into some of the details of stamp sands, we have heard some pretty compelling stories from our friends in Alaska on the cultural significance of whale hunting in those communities. I know that your tribe has a long history, as well as all the tribes around the Great Lakes. It is part of who you are as a people.

Could you describe the impact of having treaty-granted fishing rights and why it is important to protect these treaties for the future?

Mr. SWARTZ. That is a very good question, Senator Peters. I appreciate the question.

You are right. We did sit down in your office. We had a conversation about treaty rights and what they mean to people like me.

I really did not know we had treaty rights. When I was growing up, I always assumed that everybody had the right to go out and fish. I was one of those that went out with my grandfather and set fishing nets for subsistence. I mean, that is what we ate. So my grandfather would take me out, and we would row the boat. My job was to row the boat.

We would always do it at night after the sun went down. And then in the morning, we would pick it up. He would pick up the nets in the morning, because I would have to go to school.

For many years, that is just the way it went. Then I found out, later on in life, that you really could not do that, so the Keweenaw Bay Indian Community had to fight for those treaty rights, and they were granted sometime in the early 1970s.

Then my grandpa said, "Well, Chris, we no longer have to set our nets in the dark or pick them up in the dark anymore. It is legal to do this." So he picked me up, and it was sunlight. In the morning, we went to pick these nets up. I said, "Holy smokes, grandpa. Look at all the fish we got in these nets." He paid me a dollar a day, a dollar a day to row the boat. I said, "Well, that has to change." So I asked for a raise, and he gave me the raise.

But getting back to it, my tribe has always been dependent on the fish that are in Lake Superior. We are a fishing tribe, and we have always been dependent on those abilities to eat those fish.

It is really important to us. I mean, it is getting worse and worse, to protect those rights, because of the stamp sands issues that are encroaching on those spawning reefs. So I hope that answered your question.

Senator PETERS. It did. It is obviously why it is so important that we respect these rights.

You brought up stamp sands again, which is a critical issue for us up in the UP and for Lake Superior. I know the Keweenaw Bay Indian Community, along with the Great Lakes Indian Fish and Wildlife Commission, and the Chippewa Ottawa Resource Authority, have all been instrumental. All of you have been instrumental in raising awareness of the stamp sands issue, and advocating that the EPA take steps to remediate the impact of the sands on the Buffalo Reef.

So the question I have is, how long have you been advocating for this? My understanding is it has been a long time. Why has it taken so long to make this the priority that it should be?

Mr. SWARTZ. That is a good question. I do not know why it has taken so long, but I know we have been working since 2005 with the Great Lakes Indian Fish and Wildlife Commission in mapping some of those stamp sands that were coming along.

More recently, we have been working along with our partners, including the MDEQ, the Great Lakes Indian Fish and Wildlife, and others to address those stamp sands issues.

I get carried away sometimes, so what was the question again?

Senator PETERS. How long have you been advocating? And why do you think it has taken so long, because you have already mentioned it has been many years.

Mr. SWARTZ. Yes, it has been since 2005. More recently, we have seen some efforts moving forward to clean that up. Working with our partners, hopefully, we can come up with a long-term solution rather than a short-term solution, because a long-term solution would be a win-win situation for everybody involved in the fisheries.

Senator PETERS. Thank you.

Mr. SWARTZ. You are welcome.

Senator SULLIVAN. We are going to do another round of questions, if that is OK with the witnesses.

Let me follow up, President Swartz. Can you explain what exactly the treaty stated? Or what was the focus of the treaty, in terms of your fishing rights with regard to your tribe and the United States Government? And do you believe that the treaty is being adhered to?

Mr. SWARTZ. I was never taught this in school, for starters, so I had to learn about treaties through the elders. The elders tell me the reason the treaties are so important to us is because we used to have a lot of land, and a lot of that land was taken away in exchange for reserved treaty rights and the right to exercise the ability to hunt, fish, and gather on our native lands.

We take treaty rights very responsibly up there. Not only do we recognize that we have the right to take some of these resources, but we have to do it in a way that respects the resource. You do not just take and take and take. I mean, you have to take it in a way that respects the resource and reserves it for the next 7 generations.

The Keweenaw Bay Indian Community and all the other Indian tribes that I have been in touch with, I think that is their main focus. It is, how do we exercise our treaty rights but at the same time reserve those resources for the next seven generations?

Because it is not like, Mr. Chairman, once the resources are gone, I can pick up and move, because the reservation was reserved for us for eternity. Once the resources around my reservation are gone, it is going to have an impact on my people.

So it is really important to me and other tribes that we respect those resources in a manner that preserves them for the next seven generations. I hope that answers your question.

Senator SULLIVAN. It is a great answer.

Let me ask Dr. Suydam, I am very interested in more of the details on cooperation between the management and scientific research regarding the bowhead harvest. It is conducted cooperatively with the AEWC, the North Slope Borough, and NOAA. Can you provide the Committee with an explanation of this relationship, how well it is working?

And then after that answer, I would welcome really all three of the Alaskan witnesses to talk a little bit more about this issue of traditional knowledge. Sometimes we hear it here in the Congress, but to be perfectly honest, not many Members know what it even means.

So, Dr. Suydam, if you can talk about that relationship? And then, Mr. Mayor, Mr. Chairman, any other input on this issue of traditional knowledge and how that has really had an impact on creating a much more accurate survey of whales?

Dr. SUYDAM. Mr. Chairman, thank you very much for the question.

As you know, NOAA has the legal responsibility for managing bowheads. But the Inuit of northern and western Alaska have been using and managing bowheads for millennia. So really, they are in a better position to manage bowheads.

The relationship, though, between the three organizations that you mentioned, the AEWC, the North Slope Borough, and NOAA,

is really good at the moment and has been for a couple years. We work really well together at the IWC, presenting the science, presenting traditional knowledge to the Commission. But we also work really well together in collecting science and funding the science.

Some funding comes from NOAA. The majority comes from the North Slope Borough through the guidance of Mayor Brower.

So with that collaboration, we are able to collect information that is needed to make informed decisions. So we interact on a regular basis on all aspects of the science and management. The North Slope Borough has the primary responsibility of collecting the ice-base census, so we have scientists stand out on the ice edge and count whales as they go by.

We also listen to them. We will talk more about that here, I think, in a second, with the traditional knowledge component.

But the Borough conducts that survey, whereas NOAA is more involved in some aerial surveys and photo ID work that sometimes is used for population estimates as well.

But the bottom line is we work really well together. There is really good communication and collaboration and cooperation.

Senator SULLIVAN. I am glad to hear that. As you know, this Committee has oversight responsibilities with regard to NOAA, so if the cooperation is not going well, you should please inform us, and we will make sure that that changes. But right now, I am glad to hear that.

I want to be respectful of Senator Peters' time. I will do one more round of questions. I am over my 5-minute limit. Then we can get back to the question I had asked on traditional knowledge.

But, Senator Peters, do you have another round?

Senator PETERS. Well, I will do a follow-up question on whale hunting, which I found absolutely fascinating. We do not do a lot of that in Michigan.

[Laughter.]

Senator PETERS. So this has been a great topic, and I am certainly fascinated by the community aspects of it.

Mr. Hopson, I am just curious, you talked about the sharing of the food that comes out from the whale. How many pounds of food are you talking about? Maybe tell me a little bit more about the process. How long does it take, from beginning to end, from the kill to the processing? This seems to be an incredibly involved undertaking with lots of people and huge benefits for subsistence. If you can just go through that, that would be great.

Mr. HOPSON. Thank you, Mr. Chairman. And thank you, Senator, for the question.

Whale is averaged to about a ton a foot. So if a 30-foot whale is landed, you are looking at 30 tons, which is about 60,000 pounds.

The community comes together and hauls it on top of the ice. The men will cut it up—men, women, and children will cut it up and section them out and divide them equally.

In our community, we have approximately 140 households. We have about 550 people. In our fall hunt, we are capable of dividing that whale into 140 pieces, 140 shares, and the people take home equal amounts, so that it is shared among the whole community freely.

When we do our spring hunt and we are successful, we also have what we call a Nalukataq, a blanket toss festival, a whaling festival. That involves a big feast of the community.

In my community, we come to our recreational ballfield area. The whole community will come together, and the successful whaling crew will feed the people. There are a lot of other parts to it where you have eider ducks and geese soup. And they distribute a portion of the whale to the community. Then after that, we have a blanket toss festival and an Eskimo dance.

But it is all about sharing and survival, and making sure that everybody gets an equal share of that whale. It does not matter who you are, what your last name is. Everybody is invited to the feasting grounds and given an equal share.

Senator PETERS. What a wonderful tradition. Thank you for sharing that with me. I appreciate it.

Mr. HOPSON. Thank you, Senator.

Senator PETERS. President Swartz, we have talked about developing a long-term strategy to deal with the stamp sands issue, which you have been discussing at this hearing. I know that there is a task force that is being formed. We have State, Federal, and tribal government representatives all part of that Task Force.

Could you explain to the Committee what role the tribes will be playing in this process? How do you see your involvement in it?

Mr. SWARTZ. That is a good question, Senator. Hopefully the role, like we have been talking, is incorporating traditional economic knowledge into this, tech knowledge. That role that the tribes play in it would be essential in being able to identify some solutions and problems or solutions from a tech point of view. We can incorporate into both solutions and problems that incorporate those tech issues.

So I was hoping that the native tribes would have an opportunity in this task force to incorporate a native perspective into how to move forward in addressing the stamp sands issue up at the Buffalo Reef. I think we are working closely with the Michigan Department of Environmental Quality and our Federal partner. I really do not know who our Federal partner is. Oh, yes, the Army Corps.

I think that task force has just been created. And our DNR, our environmental people, are part of that task force.

Senator PETERS. Great. Just one final question, Mr. Chairman, is that in order to accomplish this, we need resources. I am sure you are well aware of the Great Lakes Restoration Initiative. That funding helps clean up toxic sites around the Great Lakes and abandoned industrial sites. As a result of that, it has Federal funding. It has come under attack at times, although we have always been able to restore that funding for the Great Lakes, and we will continue to do that.

Perhaps you can elaborate on how that funding is so critical for this project. As well, I know you are involved in other projects related to lake trout as well. If that Great Lakes restoration funding was not available, what sort of impact would that have?

Mr. SWARTZ. It would have a detrimental impact on the reservation, because that funding helps us provide capacity in some of the things that we are doing and that we are monitoring. The funding helps not only monitor the stamp sands issues but there are other

things that affect the Great Lakes also. That money would help us continue to have the needed capacity.

One of the goals that we are looking for is coming up with a way to regulate not only some of the air but the water quality standards that are on or near the reservation. Some of this funding may help with coming up with some solutions to the problem.

Senator PETERS. Thank you.

Mr. SWARTZ. You are welcome.

Senator SULLIVAN. Thank you. I am going to do one more round of questions. I very much appreciate everybody's patience here, particularly Senator Peters, who has been a great partner on this Committee with me. I think he has a pretty busy schedule here, so if he can stay or has to leave, I want to thank him again very much for his focus and great questions for both of the witnesses.

Gentlemen, I wanted to go back to this issue of traditional knowledge. Dr. Suydam, you touched on it. I would really like to hear from Mayor Brower and Chairman Hopson, particularly this issue of what it is, but also, in some ways, how accurate, particularly in terms of the bowhead whale and other counts that we have done on the North Slope that in some ways have been more accurate than the Western scientific method, and bringing them together, how important that is.

So can either of you two elaborate on that, what it is and then how important it is to the community? And maybe even some stories about what our traditional knowledge in Alaska was able to impart on others in terms of numbers and data that a lot of Western science was missing?

Mr. BROWER. Senator, thank you for the question. The traditional knowledge that we identified through our history, it is passed on orally, oral communications and everyday communication, in terms of what activity that we are involved in. We developed communications on resources that we depend on for subsistence. Preparing them for food was a family oral communication. Children, adults were involved in the handling and preparation of the food, storing it for later use.

These kinds of oral communications over time built up the knowledge for children, young adolescents growing up in the family setting, passing on observations over time that have been gained through experience of making calls on weather fronts that are before us, just making observations on a daily basis, every couple hours.

Being out on the ocean is very dangerous in our environment in Barrow. Making daily observations of ice accumulation, ice ridge building. These kinds of observations you share with the immediate family, in terms of what observations were being made. They are in a database. A couple weeks—and you share these observations, too, your other constituents that are hunting with you, your hunting partners, your family, your extended family, communicating that information to be careful in these areas because we know it is not safe and communicating where the safe areas are, where to move. In the event there is a situation that arises, this is a safe location for you to be at this circumstance.

So passing on that knowledge of different observations on a daily basis, building up that communications to a certain extent that tra-

ditional knowledge is passed down through oral communications and generation to generation, whether it has been repeated or not. It means that it has occurred in the past, and this is something that you should expect to follow through.

In regard to some of the traditional knowledge in terms of the science to the whaling and the moratorium, the Federal scientists did not have that communication directly with our community whaling captains. They had a lot of knowledge over time that had built up from their hunting experiences on an annual basis.

Barrow being strategically located, whales migrate both directions, in the spring heading north and in the fall heading back southwest. So it was very strategically located, and activity of whaling occurred, and the knowledge that was being passed on was through observations. Ice conditions, ocean currents, wind conditions, these are things that are very detrimental to our hunting, if we do not pay attention, making these types of observations. Ice and currents moving rapidly in the transition zones are very important.

Having a learning experience with our whaling captains, to communicating with them first-hand, visiting them to talk to them, questioning them about what it is that we need to know before we even get out on the ice. What is it that we should be looking for? Who should we be talking to or listen to in the event there is an emergency, in terms of the communications that occur?

If somebody says something over the radio, and that person does not know these people that are talking, sometimes they do not react, right? But if the person is known, and there is a situation that arises, and they are being informed over their communications radio, then that person makes a decision right then and there, "I am moving." Just what that person was indicating over the communication system.

These things are very important to identify in terms of scientists communicating with local people to identify with conditions, not making their observations to improve their research on whaling.

Senator SULLIVAN. How about, Chairman Hopson and Mr. Mayor, again, you can weigh in, or, Dr. Suydam, how about just on the accurate prediction of the number of whales? I mean, I think with regard to traditional knowledge, I think in some ways, the traditional knowledge is a lot more accurate than some of the scientists.

Isn't that true? Hasn't that been the experience in the North Slope region?

Mr. HOPSON. Thank you, Mr. Chairman. Mr. Mayor here has lived it, and I have heard the stories as these happened before I was old enough to be out there. The scientists had to learn from the local whalers on how to count whales. The scientists were taught to listen for them as they traveled under the ice.

Mr. Mayor spoke of it earlier, the fact that the scientists came out and decided to do a count, and they only counted what they saw. When the ice came in, they went back up. But they did not realize and did not know the whales continued to migrate under the ice and further out.

So they were missing a lot of whales in their initial count. Working together with them and the local hunters, and wanting to make

sure this is done right, the elder whalers taught these people how to listen for them. So then the program was created on acoustics and so on, so now we have an accurate count, a more accurate count, to reflect what we currently have from the past to today.

Senator SULLIVAN. I think that gets back to the point we were discussing earlier, why the collaboration between the AEWC, the North Slope Borough and NOAA is so, so important.

Let me ask another question, again for the Alaskans. Historically, there has been times when renewal was in jeopardy with regard to the IWC. Can you comment on how the reliance on the decisions of an international body affect the nutritional and cultural well-being of Alaskan Native communities and how tentative that is?

Mr. Mayor, you talked about that in your testimony, but just to give this Committee a better understanding of just some of the concerns that raises in communities throughout the state.

Mr. BROWER. Again, Senator, thank you for the question. These are very important discussion points.

It seems to be a threat to the community in times where the decisions that are being made by an international body, that we have to come back and try to explain to our hunting communities. Sometimes they build up the anxiety because the communication is not clear. What does it mean when the IWC does not renew our quota? What do we have to do then?

So we have to come back and try to explain to them there is another process that we have to work within our Federal Government to have an intersessional meeting to get the IWC to make its determination, whether to go or not to go whaling.

Senator SULLIVAN. This committee is going to follow that very closely. We understand the concerns, the trepidation in some ways it brings to thousands of Alaskans.

We will also be introducing legislation. We want to work with the IWC, but it would be a backstop domestically to enable these important, sustainable, subsistence hunts to continue. So we will look forward to working with all of you on that issue.

Let me ask, changing the topic a little bit here at the end, but I do want to take the opportunity, given your expertise, and again I would like to ask this of Dr. Suydam, Mayor Brower, and Chairman Hopson, do you think the Marine Mammal Protection Act is working well as it relates to subsistence opportunities for Alaskan Natives? And are there any changes in that law, which is an important law, but also has provisions for subsistence hunts for Alaskan Natives? Any changes that you would recommend to this Committee, as we also take the opportunity to look at that issue?

Dr. SUYDAM. Thank you, Mr. Chairman. The Marine Mammal Protection Act, of course, is powerful legislation, and it provides for lots of opportunities. The exemption the Alaskan Natives have for being able to hunt and take marine mammals for subsistence is an incredibly important component of that.

The bowhead whales that we have talked about today have a great deal of information about them. We know more about bowheads than probably any other certainly whale and maybe any other marine mammal in the world. In large part, that is because

of the collaboration between the scientists and the hunters, and integrating those two ways of knowing.

Unfortunately, with many of the other stocks, there are tremendous data gaps. The funding has not been adequate to collect data on most of the marine mammal stocks not only in Alaska but other places in the U.S. That lack of information makes it very difficult to make wise, informed decisions, whether it is about hunting or whether it is about commercial activity in the ocean or anything else.

So I think that there are ways that the MMPA could be strengthened. Those are some of them. There is always limited funding not only for science but also for comanagement organizations in Alaska that would benefit tremendously and be able to help the government do a better job in managing marine mammals, if there were just a little bit more funding available.

Senator SULLIVAN. Any other thoughts on the Marine Mammal Protection Act?

Listen, I want to give each witness an opportunity. All of you have traveled very long distances to come before this Committee. Thank you for your outstanding testimony. The answers have been very illuminating. I really want to give each witness an opportunity to just highlight or make a statement on any other points that you want to re-emphasize or points that you think we did not cover in this hearing. It is a very important hearing.

If there is anything else you would like us to focus on and be aware of before I close the hearing, please let us know. I will open that up to all four witnesses.

Dr. SUYDAM. Mr. Chairman.

Senator SULLIVAN. Dr. Suydam.

Dr. SUYDAM. Thank you. Sometimes, regulations and Federal regulations in Alaska are pretty rigid, and there is not a lot of flexibility there—understandable, but not necessarily very acceptable.

In part, these regulations—I do not know if I want to say this, but there are not enough people that work for the agencies up there to adequately do the job that is required by the law. And that is probably not going to change anytime soon.

So one way to fix that is to take better advantage of the hunters that are out on the land and the sea every day, and they have been out there throughout their lives. As Mayor Brower talked about, the information that he has received from his father and grandfather and uncles, the hunters know more about what is happening out there than any scientist does. Being able to incorporate hunters and elders into the process where regulations might be developed and implemented would improve dramatically.

The agencies cannot do their job because they do not have the resources to do it. So if we are going to conserve marine mammal stocks, and we are going to provide for appropriate subsistence opportunities to meet needs, this collaboration and cooperation needs to be strengthened tremendously.

I think it would help the Federal Government do its job. It would certainly reduce stresses in the communities. When the communities are involved in day-to-day decisions and management, things go much, much better.

Senator SULLIVAN. That is a great point, and we will certainly look at that. Thank you.

Any other comments? Chairman Hopson.

Mr. HOPSON. Thank you, Mr. Chairman, for the opportunity.

First, I just want to note that the MMPA is outdated and needs more emphasis on comanagement when updating it.

But I do want to stress the fact that we are not looking to get out of the IWC. We are only doing this to protect our hunt and our people from basically extinction.

I do want the Chairman to know, and your committee to know, that AEWC, the U.S. delegation, and NOAA have a wonderful working relationship, and we are very pleased and happy.

Thank you.

Senator SULLIVAN. Thank you for that.

Mr. Mayor.

Mr. BROWER. Just in closing, Mr. Chairman, thank you for the opportunity, again, to be here and give testimony to your Committee.

I think I am in support of what Dr. Suydam and Chairman Hopson is indicating. I think the collaboration that we built and working relationships for our communities is very outstanding. I think we would like to see this continue moving forward. Thank you.

Senator SULLIVAN. Great. Thank you. Thank you all.

President Swartz.

Mr. SWARTZ. Thank you, Chairman Sullivan, again, for giving us the opportunity to be here before you today and address some of the concerns and issues we had. I do not really have a whole lot in concluding, but I just wanted to touch on a little bit about the objective of the task force that we had talked about earlier with our co-partners.

The objective is to explore long-term solutions to the problem, as well as identify costs and possible funding sources.

What I did not mention earlier is, fortunately, these stamp sands may have a beneficial use. Some companies are potentially interested in using them in fabricating shingles. Copper is often added to shingles to retard the growth of moss or lichen, and the stamp sands already have copper in them.

This would be a great use for the stamp sands, and there may be others. The tribes have a seat on this three-person committee, and we will be an equal partner in bringing good science and sound policy analysis to the table.

I appreciate the time again. Thank you, Mr. Chairman.

Senator SULLIVAN. Great. That sounds like an idea with a lot of potential, so thanks for raising that.

Again, I want to thank the witnesses. The hearing record will remain open for two weeks. During this time, Senators may submit additional questions for the record. Upon receipt, the witnesses are respectfully requested to submit their written answers back to the Committee as soon as they can.

Again, I want to thank the witnesses for appearing today. A very, very productive hearing. This hearing is now adjourned.

[Whereupon, at 3:45 p.m., the hearing was adjourned.]

# A P P E N D I X

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. GARY PETERS TO DR. ROBERT SUYDAM

*Question.* Bowhead Counts: Mr. Suydam, in your written testimony, you mention the challenges thinner ice and climate change pose to the bowhead whale science program.

Can you share any of the new approaches and options for counting bowheads with these changing conditions?

Answer. The North Slope Borough, working closely with the Alaska Eskimo Whaling Committee (AEWC) and the Barrow Whaling Captains' Association, conducts counts of bowheads form the edge of the landfast sea ice near Barrow, Alaska. The ice-based counts include two components, visual and acoustic. In essence, the estimate of bowhead abundance is based on visual observations which are corrected for whales that were outside the viewing range by using acoustic monitoring. Our long term data set, stretching back to 1978, provides a valuable trend estimate of a rapidly growing population.

To conduct a count, we have our personnel on the ice for 24 hours a day unless unsafe conditions cause them to retreat to land or back from the lead edge. There are inherent dangers in working and spending long periods of time on the sea ice. The ice can break off casting our counters and the hunters adrift or the ice can buckle and rapidly form ridges also putting our counters at risk. We used to camp on the ice but as climate change has caused the sea ice to thin and become less stable and predictable, we now commute from land to the counting site. Personnel now remain on the ice for 10 to 12 hours before returning to land. Our last successful count occurred in 2011 but we have not even attempted a count since then because of dramatically unsafe, unstable, and unsuitable ice conditions.

In addition to modifying our ice-based count to deal with changing sea ice conditions, we are also evaluating other techniques for estimating the population size of bowheads. These approaches include photo identification sight/resight, aerial line transect, and possibly a newly developing genetic technique.

We have previously estimated the population size of bowheads using the photo identification technique. This approach involves aerial surveys that take photographs of whales as they surface. Bowheads are black but have some white patches and scars heal white. The pattern of white patches and scars allows us to identify some individual whales in one year and then re-sight them in future years. Obtaining enough photographs of whales, including enough re-sighted animals over several years allows us to estimate the size of the whale population. In 2011, we successfully conducted both an ice-based count and an aerial photographic survey in the event that we had to transition to using only the photographic surveys in the future. By conducting both approaches in the same year we made it easier to directly compare population estimates from ice-based and photographic surveys to estimate population trend. Unfortunately, there are several downsides to aerial surveys: (1) they put observers at risk when flying over ice and water in the Arctic, (2) tend to be quite expensive (3) and matching photographs across numerous years is very time-consuming and costly.

Therefore we have recently begun to consider other options for counting bowheads. The National Marine Fisheries Service (NMFS), with funding from the Bureau of Ocean Energy Management (BOEM), has been flying aerial surveys over the Beaufort Sea since 1979. In 2016 and 2017, those surveys spotted thousands of bowhead whales over a few short days in late August. We have been working with NMFS and BOEM to investigate whether a slight modification of the surveys might provide us with estimates that are good enough for monitoring the bowhead population.

Finally, genetic analyses have advanced tremendously in the past 5 to 10 years. It is now feasible to analyze many samples in a short period of time and at relatively minor expense. A new approach for analyzing genetic data may provide a means for estimating population size based on the number of "close kin" that are

identified in the sample. If this approach proves to be usable, we could collect skin samples from harvested whales and skin biopsy samples from living whales for use in this close kin analysis.

In 2019, we plan to conduct an ice-based count. We hope that ice conditions will allow us to count bowheads as they migrate past Barrow during spring. In the meantime, we will pursue improvements in other counting techniques as the Arctic sea ice continues to thin. We fully expect that we will be able to continue to provide bowhead population data to the IWC, the NMFS, and the Alaska Eskimo Whaling Commission so that informed decisions can continue to be made to ensure the sustainability of the bowhead harvest.

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RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. GARY PETERS TO CHRIS SWARTZ

*Question 1.* Tribal Involvement: The Keweenaw Bay Indian Community, along with the Great Lakes Indian Fish and Wildlife Commission and the Chippewa Ottawa Resource Authority, have been instrumental in raising awareness of this issue and advocating that the EPA take steps to remediate the impact of the Gay Sands on the Buffalo Reef.

What can we do to improve the process and intervene sooner for projects that have major ecological significance, like the stamp sands being eroded and smothering Buffalo Reef?

Answer. Increase and improve opportunities to incorporate Traditional Ecological Knowledge ("TEK") into regular data gathering and monitoring activities. With respect to Buffalo Reef, tribes, and specifically tribal fisher-people, were among the first to call attention to a problem with the reef. They began to express concern about the health of the reef based on changes they were seeing in the health and abundance of the lake trout and whitefish populations in the area compared to what they saw in years and generations past. The information they provided enabled the Great Lakes Indian Fish and Wildlife Commission to obtain a grant from the U.S. EPA's Great Lakes National Program Office in 2005 to obtain sonar imaging of the reef. This imaging is what showed that stamp sands were beginning to encroach on the reef.

While TEK often seems to be given a wide-berth from those on the outside, the way TEK is gathered is comparable to western scientific knowledge. It is based on direct observation, hypothesis development and testing, and analysis. However, TEK is gathered and passed on over many generations, focused on narrow geographic regions. Such intimate place-based knowledge developed over generations of observations can provide important, and early, insight into the health of and interactions within specific ecosystems

*Question 2.* Tribal Involvement: From your perspective, what can be done to facilitate the further involvement of tribal communities?

Answer. There are two very important ways the involvement of tribal communities can be facilitated:

1. Consistent, sufficient funding that allows tribes to invest in staff that will help them bring good science and policy to the table before any management decisions have been made or actions take place. The Great Lakes Restoration Initiative ("GLRI") is a good example of how reliable funding can increase participation. The GLRI provides money to tribal and state governments to build their capacity to remain active in Great Lakes protection and restoration activities. In 2010, this GLRI "capacity" funding was initially provided for a 5 year cycle. This allowed tribes to develop more holistic Great Lakes programs and hire full-time staff to represent them in multiple interjurisdictional Great Lakes initiatives. Tribes and intertribal agencies took active roles in many of the Annex Subcommittees formed under the 2012 update to the Great Lakes Water Quality Agreement, the Great Lakes Executive Committee, the Work Group of the Binational Program to Restore and Protect the Lake Superior Basin, and the Zero Discharge Demonstration Program. Now on an annual funding cycle, the GLRI capacity funding is not as reliable. This means that tribes are less able to rely on long-term programs and may hesitate to increase their workforce as might be necessary to work on those Great Lakes initiatives of most concern to them.
2. Federal agencies must have staff that are trained, in-depth, in tribal issues and treaty rights so that when issues come across their desks that have the potential to impact tribes, they can take the initiative to bring tribes into the loop early in the process. Federal agency staff are often the first to know about

suggested changes to policies or regulations, or of a multitude of emerging issues, but often, unless the word "tribe" is explicit, these staff do not understand the boundaries of issues of interest to or that might impact tribes. A basic understanding that tribes still exist within this country as sovereign nations and that the Federal government has a nation-to-nation relationship with tribes is not sufficient training to ensure tribal interests are represented within these agencies. Each Federal agency must have staff that are trained sufficiently to identify what issues or potential actions have the potential to impact tribes or their treaty rights and how to approach them to bring them in to the loop early enough to have an impact on the decisions being made.

*Question 3.* Gay Stamp Sands Task Force: To develop a long-term strategy to address this issue, I understand that a Gay Stamp Sands Task Force is being formed with state, federal, and tribal governmental representatives forming a steering committee.

Why is this a good example of including tribes and moving towards solution to environmental problems?

Answer. The Gay Stamp Sands Task Force is made up of multiple jurisdictions and academia working together to develop a plan and undertake actions to work towards a mutually beneficial goal. Tribal worldview will be shared to help develop a goal that is beneficial to the health and diversity of lake trout and whitefish, and that will then have cascading benefits for all interested communities. By involving tribes in the beginning, they have a role in developing both the goal and the plans and actions necessary to reach that goal.

*Question 4.* Gay Stamp Sands Task Force: What will be the goals and objectives of the Task Force?

Answer. The objective of the Task Force is to explore long term solutions for protecting the reef from the encroaching stamp sands as well as to identify long term solutions for what to do with the stamp sands themselves. The Task Force will also work to identify costs and possible funding sources.

*Question 5.* What types of long-term solutions will they be considering?

Answer. One of the potential solutions involves building a revetment, or wall, to contain the sands that remain on the land. This would keep those sands from eroding into the water. Although stamp sands will continue to need to be dredged from the water in order to keep them away from the reef, there may be beneficial uses for the stamp sands. Some companies have expressed an interest in using them to fabricate shingles. Copper is often added to shingles to retard the growth of moss or lichen. The stamp sands already have copper in them. While this would be a good use for the stamp sands, there may be others.

*Question 6.* What will be the role of the tribes throughout this process?

Answer. The Keweenaw Bay Indian Community has agreed to sit on the three person steering committee. Other tribes like the Red Cliff and Bad River Bands, as well as intertribal agencies, will likely be represented on the larger Task Force. They will be equal partners in bringing good science, expertise, and sound policy analysis to all steps in the planning and implementation processes.

*Question 7.* KBIC Stamp Sands Efforts: Cleaning up the Gay Stamp Sands and protecting the Buffalo Reef are now in the Lake Superior Lakewide Action Management Plan (LAMP), which is an important first step. The Keweenaw Bay Indian Community has done much work addressing stamp sands issues at other sites around the Keweenaw Peninsula.

What work has KBIC done in the past to remediate Stamp Sands around the Keweenaw Peninsula in the Upper Peninsula of Michigan?

Answer. Using GLRI funding, KBIC has spent a significant amount of time and effort to try to restore Sand Point, an on-reservation area that has been contaminated by stamp sands from a mill site approximately 4 miles to the north. In 2006, KBIC began remediation of Sand Point by installing a 6"-10" cap of sandy-loam soil over the stamp sands across the 33.6 acres of lakeshore, and seeding it with a short grass mixture to protect it against erosion. It has been enhanced with added soil, seed plots, mound plots, trees, shrubs, boulders and additional walking trails. Specific improvements include 228 pounds of native seeds planted, representing 56 species; 34 planted seed plots; 58 planted soil mounds; 442 square yards of beach grass planted; 13,380 trees and shrubs planted, representing 19 species; the placement of 19 boulders; the construction of 3,018 feet of a gravel walking trail; a 2 acre butterfly garden, and a ½ acre meditation garden. While plant diversity increased dramatically in just the first growing season, KBIC has continued to experiment with different plants and organic matter to try to stabilize the movement of the sands.

*Question 8.* KBIC Stamp Sands Efforts: What other measures have you taken or that you are planning to take to restore Lake Trout to the Great Lakes?

Answer. While the lake trout in Lake Superior have been declared "restored" as of 1996, the key to continued success is to not lose what federal, state and tribal partners have worked so hard to gain. Buffalo Reef was stocked with 1.6 million lake trout over a 30 year period. It currently remains one of the most productive reefs in Keweenaw Bay, and KBIC stocks approximately 50,000 lake trout per year in an effort to restore some of the smaller spawning reefs in lower Keweenaw Bay.

To maintain the continued success of lake trout in Lake Superior, in addition to stamp sand remediation, KBIC and GLIFWC continue to undertake sea lamprey control measures—without that, all gains are lost. The tribes and states set harvest limits based on population assessments for lake trout to ensure sustainability of the populations using protocols and targets agreed to by the Lake Superior Technical Committee of the Great Lakes Fishery Commission.

*Question 9.* KBIC Stamp Sands Efforts: Now that the Buffalo Reef is indeed a priority as indicated by its inclusion in the LAMP, does the tribe have capacity to address the project? What further resources would the tribe need to be a full partner and ensure their place at the table?

Answer. The importance of the GLRI in providing capacity funding has been mentioned above. Continued and reliable capacity funding is imperative to ensuring tribes have the manpower to be at the table. Funding is also necessary for tribes to undertake appropriate research or other projects to contribute to the development of long-term solutions and ensure that tribal issues and priorities are fully explored and addressed.

*Question 10.* Lakewide Action Management Plan: President Swartz, it is wonderful that Keweenaw Bay Indian Community and Great Lakes Indian Fish and Wildlife Commission have been partners in authoring the Lake Superior Lakewide Action Management Plan—or LAMP—which recommends that we work to remediate the impact of the Gay stamp sands and protect the Buffalo Reef.

Did the EPA help facilitate the KBIC's participation in the drafting the LAMP?

Answer. Yes. KBIC participates in the Lake Superior Partnership Work Group ("LSPWG"). The LSPWG was initiated under the Binational Program to Protect and Restore the Lake Superior Basin, and has expanded its role under the 2012 update to the GLWQA. The LSPWG is coordinated by the U.S. EPA's GLNPO and Environment and Climate Change Canada, and is made up of representatives from all jurisdictions that have management authority over Lake Superior, like Minnesota Pollution Control Agency, the Wisconsin Department of Natural Resources, the U.S. EPA, the U.S. Fish and Wildlife Service, and many tribes and intertribal agencies. KBIC participated in drafting the Lake Superior LAMP by virtue of its participation on the LSPWG, work that was facilitated by the U.S. EPA.

*Question 11.* Lakewide Action Management Plan: Was there funding available for that purpose? If so, where did that funding come from?

Answer. Yes. Tribes and intertribal agencies have used GLRI capacity funding to fund participation in the drafting of the LAMP. When the GLRI originated, funding came directly to tribes from the EPA, but currently the EPA transfers capacity funding (and some project funding) for tribes and intertribal agencies to the Bureau of Indian Affairs. The Bureau then provides funding to tribes through Pub. L. 93–638 contracts and compacts. Utilizing 638 compacts and contracts has simplified and sped up the receipt of this funding by tribes. They and their reporting and tracking processes are well-known to tribes and the BIA.

*Question 12.* Lakewide Action Management Plan: What role do LAMPs serve, and why is that important?

Answer. Each of the five Great Lakes has a Lakewide Action and Management Plan that serves as an action plan to direct activity geared towards restoring and protecting the water quality and ecosystem of each lake. These LAMPs build upon a wide variety of local, tribal, state, provincial (except for Lake Michigan), national, and binational experiences, systems, and plans. The LAMP will guide the identification, prioritization, and implementation of actions to restore and protect the lakes and their ecosystems.

Based on our experience working with the Lake Superior Partnership Work Group on the Lake Superior LAMP, the LAMPs are of unmatched importance. They rely on the engagement of all entities with a stake in the continued health of the Great Lakes basin, including representatives of federal, state, and tribal agencies. These agencies then work closely with many non-governmental entities to manage and protect their respective portions of the basin and its ecosystems. By engaging all stakeholders, the LAMPs operate as a central organizing plan; the LAMP ensures efficient use of resources by ensuring efforts do not overlap but build on each other

and that all stakeholders buy in to the activities that will protect and restore each of the lakes and its ecosystems. The restoration and protection of the Great Lakes and their ecosystems depends on the efforts of everyone.

*Question 13.* GLRI Funding: President Swartz, the Great Lakes Restoration Initiative—or GLRI—has been important to remediating numerous industrial sites and to restoring natural habitats across the Great Lakes region.

Can you elaborate on how GLRI Funding has been used to help protect the Buffalo Reef in Grand Traverse Bay and in other areas affected by stamp sands in the Keweenaw Peninsula?

Answer. A number of funding sources have been used on the Buffalo Reef project, including the GLRI. The Army Corps of Engineer's Great Lakes Fishery and Ecosystem Restoration ("GLFER") program funded a feasibility assessment that evaluated options to stop the further encroachment of stamp sands, however, the 2017 dredging in the Grand Traverse Harbor was funded through GLRI, and further dredging in 2018 will be funded through the GLRI. In addition, KBIC and GLIFWC staff time to work on this project was paid for with GLRI capacity funding. Finally, the KBIC's project to restore Sand Point (referenced above), was completed using GLRI funding.

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